Access DB# 125850

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: HELEN RECUTO Examiner #: 70058 Date: 6/28/04
Art Unit: 1713 Phone Number ~~30~~ 2-1108 Serial Number: 10/084,628
Mail Box and Bldg/Room Location: REM-1B29 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

****

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: SEE ATTACHED

Inventors (please provide full names): _____

Earliest Priority Filing Date: 2/22/2001

For Sequence Searches Only *Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

phosphorus-containing polymer defined by (I) or (II) in claim 1

- phosphorus-containing monomer in examples (attached) and: aminoethylphosphonic acid
  vinylphosphonic acid
  aminomethanephosphonic acid
- P is typically: polyvinyl alcohol, polyethylene glycol
- A-SY (see page 2 attach)

* Enclosed working examples pages.

KEY WORDS
sensors, bio/chemosensors, optical waveguides_transducer dielectric

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Searcher: K. Fuller
Searcher Phone #: _____
Searcher Location: _____
Date Searcher Picked Up: _____
Date Completed: 7/1/04
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Type of Search

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AA Sequence (#) _____
Structure (#) 1
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Vendors and cost where applicable

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PTO-1590 (8-01)

STIC Search Report
EIC 1700

STIC Database Tracking Number: 125850

TO: Helen Pezzuto
Location: REM 10A29
Art Unit : 1713
July 1, 2004

Case Serial Number: 10/081628

From: Kathleen Fuller
Location: EIC 1700
REMSEN 4B28
Phone: 571/272-2505
Kathleen.Fuller@uspto.gov

Search Notes

2/22/01

STIC Search Results Feedback Form

USPTO

EIC17000

Questions about the scope or the results of the search? Contact *the EIC searcher or contact*:

Kathleen Fuller, EIC 1700 Team Leader
571/272-2505 REMSEN 4B28

Voluntary Results Feedback Form

- *I am an examiner in Workgroup:* ☐ *Example: 1713*
- *Relevant prior art* ***found****, search results used as follows:*
  - ☐ 102 rejection
  - ☐ 103 rejection
  - ☐ Cited as being of interest.
  - ☐ Helped examiner better understand the invention.
  - ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature
  (journal articles, conference proceedings, new product announcements etc.)

- *Relevant prior art* ***not found:***
  - ☐ Results verified the lack of relevant prior art (helped determine patentability).
  - ☐ Results were not useful in determining patentability or understanding the invention.

Comments:

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C1-15, 20-30 elected

10/081,628

a1

1. (Amended) Phosphorus-containing polymer, suitable for coating dielectric surfaces, of the general formula I or II,

$$P(A)_m(F)_{n1}(U)_{o1} \qquad (I)$$

$$P(A)_m(UF_{n2})_{o2} \qquad (II)$$

in which

hydrophilic polymer

P stands for a linear or branched, uncrosslinked or crosslinked, homo- or heteropolymeric polymer component,

A stands for identical or different phosphorus-containing groups bonded to P, $A = S_s Y_p$

m stands for a number from 3 to 1000,

F stands for identical or different functional groups bonded directly or indirectly to P, which are present in addition to A, hydroxyl, carboxyl

n1 stands for a number from 1 to 1000,

n2 stands for a number from 1 to 100,

U stands for identical or different, linear or branched, uncrosslinked or crosslinked oligomeric or polymeric segments, made up of identical or different monomers, which are bonded to P,

o1 stands for a number from 0 to 1000,

o2 stands for a number from 1 to 1000.

a1 cont

2. (Amended) Polymer according to Claim 1, wherein said polymer contains phosphorus-containing groups A in an amount of from 0.001 to 10 mEq.

3. (Amended) Polymer according to Claim 1, wherein said polymer contains functional groups F in an amount of from 0.001 to 20 mEq.

4. (Amended) Polymer according to Claim 1, wherein said polymer contains segments U in an amount of from 0.001 to 20 mEq.

5. (Amended) Polymer according to Claim 1, wherein the polymer has an average molar mass of from 1000 to 10,000,000 g/mol.

Mn or Mw

6. (Amended) Polymer according to Claim 1, wherein the polymer component P is a statistical copolymer or block copolymer.

7. (Amended) Polymer according to Claim 1, wherein the polymer component P is hydrophilic.

8. (Amended) Polymer according to Claim 1, wherein said polymer contains phosphorus-containing groups A in the form of a spacer carrying from one to six identical or different phosphorus-containing radicals.

a' cont

9. (Amended) Polymer according to Claim 1, wherein said polymer contains functional groups F that can form covalent bonds, coordination bonds or take part in biochemical recognition reactions.

10. (Amended) Polymer according to Claim 1, wherein said polymer contains functional groups F with crosslinkers.

11. (Amended) Polymer according to Claim 1, wherein the segments U have a molar mass, or average molar mass, of from 100 to 10,000.

12. (Amended) Polymer according to Claim 1, wherein the groups or segments U are hydrophilic.

13. (Amended) Process for preparing a polymer according to Claim 1, comprising the step of copolymerizing

(A) a monomer containing a phosphorus-containing group A, or a plurality of identical or different monomers containing identical or different phosphorus-containing groups A

with

(B) a monomer containing a functional group F, or a plurality of identical or different monomers containing identical or different functional groups F, and

(C) optionally, a monomer containing a segment U, or a plurality of identical or different monomers containing identical or different segments U,

to form a polymer of the formula I,

or with

(B') a monomer containing a unit $(UF_{n2})_{o2}$ according to formula II, or a plurality of identical or different monomers containing identical or different units of the formula $(UF_{n2})_{o2}$ according to formula II,

to form a polymer of the formula II.

14. (Amended) Process for preparing a polymer according to Claim 1, comprising the following steps:

(i) preparing a polymer, which forms the polymer component P and carries identical or different functional groups that are suitable as functional groups F,

(ii) reacting some of the functional groups to form identical or different phosphorus-containing groups A, and

(iii) optionally, reacting some of the functional groups to form identical or different segments U,

wherein step (iii) can be carried out after, before or together with step (ii), and wherein not all the functional groups are converted in steps (ii) and (iii), and the functional groups that are not converted in steps (ii) and (iii) form the functional groups F of the polymer.

15. (Amended) Process according to Claim 14, wherein some or all of the functional groups that have not been converted in steps (ii) and (iii) are reacted with one or more identical or different crosslinkers to form functional groups F.

16. (Amended) A method of using a polymer according to Claim 1, comprising the step of applying the polymer to a dielectric material so as to form a coating on the dielectric material.

17. (Amended) The method of claim 16, wherein the dielectric material is a dielectric waveguide or a portion of a dielectric waveguide.

18. (Amended) An optical signal transducer having a coated dielectric waveguide, wherein the coating on the dielectric waveguide consists of a polymer according to claim 1.

19. (Amended) A method of using the optical signal transducer of claim 18, wherein said optical signal transducer is exposed to a fluid containing at least one chemical and/or biochemical recognition element which is then immobilized on the coating on the dielectric waveguide.

Please add new claims 20 - 33 as follows.

20. (New) Polymer according to Claim 1, wherein said polymer contains phosphorus-containing groups A in an amount of from 0.01 to 5 mEq.

21. (New) Polymer according to Claim 1, wherein said polymer contains phosphorus-containing groups A in an amount of from 0.1 to 3 mEq.

22. (New) Polymer according to Claim 1, wherein said polymer contains functional groups F in an amount of from 0.01 to 10 mEq.

A2 Cont

23. (New) Polymer according to Claim 1, wherein said polymer contains functional groups F in an amount of from 0.5 to 10 mEq.

24. (New) Polymer according to Claim 1, wherein said polymer contains segments U in an amount of from 0.01 to 10 mEq.

25. (New) Polymer according to Claim 1, wherein said polymer contains segments U in an amount of from 0.5 to 10 mEq.

26. (New) Polymer according to Claim 1, wherein the polymer has an average molar mass of from 2100 to 1,000,000 g/mol.

27. (New) Polymer according to Claim 1, wherein the polymer has an average molar mass of from 5000 to 500,000 g/mol.

28. (New) Polymer according to Claim 1, wherein the polymer has an average molar mass of from 5000 to 300,000 g/mol.

29. (New) Polymer according to Claim 1, wherein the polymer has an average molar mass of from 10,000 to 150,000 g/mol.

30. (New) Process for preparing a polymer according to Claim 1, comprising the following steps:

(i) preparing a polymer, which forms the polymer component P and carries identical or different functional groups that are suitable as functional groups F, said functional groups F being selected from the group consisting of hydroxyl groups, carboxyl groups, derivatives of carboxyl groups and amine groups,

(ii) reacting some of the functional groups to form identical or different phosphorus-containing groups A, and

(iii) optionally, reacting some of the functional groups to form identical or different segments U, wherein step (iii) can be carried out after, before or together with step (ii), and wherein not all the functional groups are converted in steps (ii) and (iii), and the functional groups that are not converted in steps (ii) and (iii) form the functional groups F of the polymer.

31. (New) The method of claim 16, wherein the dielectric material comprises at least one material selected from the group consisting of TiO_2, Ta_2O_5, ZrO_2, HfO_2 and Al_2O_3.

32. (New) The method of claim 16, wherein the dielectric material comprises at least one material selected from the group consisting of TiO_2 and Ta_2O_5.

33. (New) An optical signal transducer having a coated dielectric waveguide, wherein the coating on the dielectric waveguide consists of a polymer according to claim 1 and the dielectric waveguide comprises at least one material selected from the group consisting of TiO_2, Ta_2O_5, ZrO_2, HfO_2 and Al_2O_3.

s stands for the number 1 (i.e. $A = SY_p$)

and in which the group or groups Y is/are selected from the following phosphorus-containing radicals:

$-O(R'O)PO_2H$, $-P(R'O)O_2H$, $-N(CH_2-P(R'O)O_2H)_2$, $-N(R')-CH_2-P(R'O)O_2H$, $-CH(P(R'O)O_2H)N(CH_2-P(R'O)O_2H)_2$, $-CH(CH_2-P(R'O)O_2H)_2$, $-CR'(CH_2-P(R'O)O_2H)_2$, $-C(CH_2-P(R'O)O_2H)_3$,

where R' stands for -H, $-CH_3$ or $-C_2H_5$.

The polymer preferably contains one or more of the following groups Y:

$-O(R'O)PO_2H$, $-P(R'O)O_2H$, $-N(CH_2-P(R'O)O_2H)_2$, in particular $-N(CH_2-P(R'O)O_2H)_2$,

where R' preferably stands for –H.

The spacer S is directly coupled to a C atom of the polymer and carries p identical or different phosphorus-containing radicals Y. According to the invention, the following spacers are preferred (group(s) Y are also indicated):

$-(CH_2)_q-(O-CH_2-CH_2)_r-Y$, $-(CH_2)_q-(O-CH_2-CH_2-CH_2)_r-Y$, $-(CH_2)_q-(O-CH_2-CH_2)_r-C_6H_4Y$, $-(CH_2)_q-(O-CH_2-CH_2)_r-C_6H_3Y_2$, $-(CH_2)_q-(O-CH_2-CH_2)_r-C_6H_2Y_3$,

where q stands for numbers from 0 to 20 and r stands for numbers from 0 to 100.

In a particular embodiment, the polymer according to the invention contains phosphorus-containing groups A in the form of a spacer S carrying from one to six identical or different phosphorus-containing radicals.

The following groups A, which are coupled directly to a C atom of the polymer, are preferred:

$-PO_3H_2$, $-NH-CH_2-CH_2-PO_3H_2$, $-CH_2-N(CH_2-PO_3H_2)_2$, $-N(CH_2-PO_3H_2)_2$, $-(CH_2)_4N(CH_2-PO_3H_2)_2$, $-OPO_3H_2$.

Functional groups F for immobilizing recognition elements

F stands for functional groups which are bonded directly to a carbon atom of the polymer, and via which recognition elements can be immobilized directly or with the aid of a crosslinker covalently, coordinatively or via another chemical bond onto the polymer, and therefore onto the surface of the bio- or chemosensor. The direct coupling of the recognition elements can be carried out

Examples

Example 1: Polymer made from phosphonate-functional copolymers.

A mixture of 50 g of N-methyl-2-pyrrolidone (NMP), 5 g of vinylphosphonic acid, 10 g of triethylamine, 15 g of methacryloxyethyl acetoacetate, 30 g of polyethylene glycol methyl ether acrylate (molar mass 750 g/mol), 0.5 g of azobisisobutyronitrile and 1.5 g of dodecyl mercaptan was heated for 6 h to 65°C. After cooling, the solution was adjusted in ethanol to a concentration of 0.1 mg of polymer per ml of solution, and the waveguide surfaces were incubated in this solution for 18 h. The waveguides were then washed with ethanol and 10 mM (M = mol/l) NaOH. A solution of 2 mg/ml of anti-myoglobin monoclonal mouse antibodies in 10 mM sodium acetate buffer, adjusted to pH = 5, was prepared and the waveguide surfaces were incubated in it for 2 h. A 1.5 ng/mm^2 surface concentration of antibodies was obtained.

Example 2: Polymer made from phosphate esters of polyvinyl alcohol.

A mixture of 50 g of a 10% strength solution of polyvinyl alcohol (polyvinyl acetate with an 88% degree of saponification and a Höppler viscosity of 18 for the 4% strength solution in water) in DMSO and 0.1% of polyphosphoric acid was heated for 15 min to 100°C. After cooling, 10 g of succinic anhydride were added to the solution and stirred at 21°C for 3 h. In the next step, the solution was adjusted in ethanol to a concentration of 1 mg of polymer per ml of solution, and the waveguide surfaces were incubated in this solution for 18 h. The waveguides were then washed with ethanol and 10 mM NaOH. The surface was incubated for 10 min in a solution of 1 M N-hydroxysuccinimide and 1 M N-dimethylaminopropyl-N'-ethyl-carbodiimide hydrochloride in ultrapure water, and then washed with ultrapure water. A solution of 2 mg/ml of anti-myoglobin monoclonal mouse antibodies in 10 mM sodium acetate buffer, adjusted to pH = 5, was prepared and the waveguide surfaces were incubated in it for 2 h. A 2.5 ng/mm^2 surface concentration of antibodies was obtained.

Example 3: Polymer made from imidised MSA copolymers.

15.6 g of polymaleic anhydride-alt-methyl vinyl ether (MW (average molar mass) = 216,000 g/mol) were added portionwise to a mixture of 9.5 g of 2-

(2-aminoethoxy)-ethanol, 1.11 g of aminomethanephosphonic acid, 1 g of triethylamine and 100 ml of water at 70°C. After cooling, the solution was adjusted in ethanol to a concentration of 10 mg of polymer per ml of solution, and the waveguide surfaces were incubated in this solution for 18 h. The waveguides were then washed with ethanol and 10 mM NaOH. The surfaces were incubated in a 10 mg/ml solution of ethylene glycol bissuccinimidyl succinate in DMSO for 30 min and then washed with DMSO and ultrapure water. A solution of 2 mg/ml of anti-human chorionic gonadotropin monoclonal mouse antibodies in 10 mM sodium acetate buffer, adjusted to pH = 5, was prepared and the waveguide surfaces were incubated in it for 2 h. A 2.0 ng/mm^2 surface concentration of antibodies was obtained.

Example 4: Polymer made from phosphonate-functional copolymers grafted with polyglycidol.

Preparation of the grafting basis (polyglycidol modified with fatty acid):

A mixture of 28 g of soybean oil fatty acid and 74 g of epoxypropanol (glycidol) was heated for 1 h to 140°C and then a mixture of 0.4 g of phosphoric acid and 333.5 g of epoxypropanol was added in portions over 6 h. The mixture was then stirred for a further 16 h at 140°C.

A mixture of 20 g of the previously prepared polyglycidol modified with fatty acid, 20 g of methacryloyloxyethyl acetoacetate, 2 g of vinylphosphonic acid, 2 g of triethylamine, 42 g of NMP and 0.4 g of azobisisobutyronitrile was heated for 16 h to 65°C and for 1 h to 100°C. After cooling, the solution was adjusted in ethanol to a concentration of 3 mg of polymer per ml of solution, and the waveguide surfaces were incubated in this solution for 10 h. The waveguides were then washed with ethanol and 10 mM NaOH. A solution of 2 mg/ml of anti-myoglobin monoclonal mouse antibodies in 10 mM sodium acetate buffer, adjusted to pH = 5, was prepared and the waveguide surfaces were incubated in it for 2 h. A 3.5 ng/mm^2 surface concentration of antibodies was obtained.

Example 5: Polyglycidol, derivatized with maleic acid anhydride and imino-bis-methylene phosphonic acid.

Preparation of the thiol derivatized imido-di-methylene phosphonic acid reagent:

A mixture of 100 g of mercapto ethylamine hydrochloride, 150 g phosphonic acid and 170 g of water was heated to 100°C and over 1 h 287 g of formaldehyde (37% strength) were added dropwise. The mixture was stirred for a further hour and then the solvent was removed under vacuum.

Preparation of the polyglycidol:

1.88 g of hexadecyl amine were melted in a 250 ml glas reactor heated to 100°C and reacted with 1.2 g glycidol. Then 0.9 ml of potassium ethoxide solution (25% strength in methanol) was added and excessive methanol removed under vacuum. At 140°C the residue was dissolved in 15 ml of dry diglyme. At a speed of 25 ml per hour 260 g of glycidol in 350 ml of dry THF were added in portions. Upon completion of the addition the reaction mixture was dissolved in 1200 ml of methanol and neutralized by filtration over an acidic ion exchanger (Amberlite® IR-120). The filtrate was precipitated in 12 l of acetone and the yielded polymer was dried at 80°C for 12 h under vacuum. 254 g of a colorless, highly viscous liquid with a molar mass of 30,000 g/mol and a polydispersity of 1.23 were received. All molecules comprise the initiator as Kerneinheit and 27% of branched building units.

Subsequently a mixture of 1 g of the previously prepared polyglycidol and 5 g of DMSO was heated to 50°C. Then 0.2 g of maleic acid anhydride was added. After 15 min it was heated to 80°C and 0.2 g of thiol derivatized imido-bis-methylene phosphonic acid reagent and 0.3 g triethyl amine were added. After 15 min 0.05 g of azoisobutyro nitrile was added and it was stirred for a further 4 h at 80°C and then for a further hour at 100°C.

After cooling, the solution was adjusted in ethanol to a concentration of 2 mg of polymer per ml of solution, and the waveguide surfaces were incubated in this solution for 16 h. The waveguides were then washed with ethanol and water. The surface was incubated in a solution of 1 M of N-hydroxy succinimide and 1 M of N-dimethyl aminopropyl N'-ethyl carbodiimide hydrochloride in ultrapure water for 10 min and then washed with ultrapure water. A solution of 2 mg/ml of anti-myoglobin monoclonal mouse antibodies in 10 mM sodium acetate buffer, adjusted to pH = 5, was prepared and the waveguide surfaces were incubated in it for 2 h. A 2.8 ng/mm^2 surface concentration of antibodies was obtained.

Example 6: Polymer made from dextran modified with acetoacetoxy and phosphate ester.

A mixture of 10 g of dextran (MW = 40,000 g/mol), 7 g of tert-butyl acetoacetate, 100 g of DMSO and 0.5 g of polyphosphoric acid was heated for 4 h to 80°C. After cooling, the solution was adjusted in ethanol to a concentration of 1 mg of polymer per ml of solution, and the waveguide surfaces were incubated in this solution for 8 h. The waveguides were then washed with ethanol and 10 mM NaOH. A solution of 2 mg/ml of streptavidin in 10 mM sodium acetate buffer, adjusted to pH = 5, was prepared and the waveguide surfaces were incubated in it for 2 h. A 4.5 ng/mm^2 surface concentration of streptavidin was obtained.

Example 7: Polymer made from phosphonate-functional polylysine.

500 mg of poly-L-lysin hydrobromide (MW = 150,000 to 300,000 g/mol), 170 mg of phosphoric acid and 4 ml of water was heated to 100°C, and then 324 mg of formaldehyde (37% strength) were added. The mixture was stirred for 1 h at 100°C. After cooling, the solution was adjusted in ethanol to a concentration of 1 mg of polymer per ml of solution, and the waveguide surfaces were incubated in this solution for 2 h. The waveguides were then washed with ethanol and 10 mM NaOH. The surfaces were incubated with a solution of 10 mg/ml of carboxymethyldextran (MW = 15,000 g/mol), 0.1 M of N-hydroxysuccinimide and 0.1 M of N-dimethylaminopropyl-N'-ethyl-carbodiimide hydrochloride in ultrapure water for 20 min. The surfaces were then washed briefly with ultrapure water and immediately incubated with 0.1 mg/ml of an amine-functionalized DNA (20 nucleotides) in 10 mM sodium acetate buffer (pH = 5). A 0.5 ng/mm^2 surface concentration of DNA was obtained.

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TSCA INFORMATION NOW CURRENT THROUGH JANUARY 6, 2004

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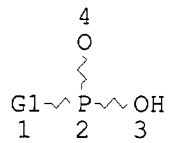
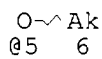


117,070 structures from this query which covers polymers or monomers



VAR G1=OH/5
NODE ATTRIBUTES:
CONNECT IS E1 RC AT 4
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RSPEC I
NUMBER OF NODES IS 6

STEREO ATTRIBUTES: NONE

L3		SCR 1839
L5	117070	SEA FILE=REGISTRY SSS FUL L1 NOT L3
L6	9950	SEA FILE=REGISTRY ABB=ON L5 AND PMS/CI
L7	8527	SEA FILE=HCAPLUS ABB=ON L6
L8	4271	SEA FILE=HCAPLUS ABB=ON L5/DP
L9	378	SEA FILE=HCAPLUS ABB=ON L8(L)POLYMER?
L10	3	SEA FILE=HCAPLUS ABB=ON L9 AND ?SENSOR?
L11	1	SEA FILE=HCAPLUS ABB=ON L9 AND (TRANDUC? OR WAVEGUIDE? OR WAVE(W)GUIDE?)
L12	4	SEA FILE=HCAPLUS ABB=ON L9 AND DIELECTRIC?
L13	460	SEA FILE=HCAPLUS ABB=ON L8(L)?POLYMER?
L14	272	SEA FILE=HCAPLUS ABB=ON L8 AND POLYMER?/SC,SX
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L19	116	SEA FILE=HCAPLUS ABB=ON L17 AND L18
L20	9	SEA FILE=HCAPLUS ABB=ON L19 AND BIOCHEM?/SC,SX
L21	42	SEA FILE=HCAPLUS ABB=ON L7(L)(TRANSDUC? OR DIELECTRIC? OR ?SENSOR? OR WAVEGUIDE? OR WAVE(W)GUIDE?)
L22	2	SEA FILE=HCAPLUS ABB=ON L16 AND L21
L23	17	SEA FILE=HCAPLUS ABB=ON L16 OR L20 OR L22

17 CA references with utility

=> d l23 all 1-17 hitstr

L23 ANSWER 1 OF 17 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2004:183217 HCAPLUS
DN 140:213455
ED Entered STN: 08 Mar 2004
TI Conjugation of enzymes on polymer nanoparticles covered with

phosphorylcholine groups

AU Konno, T.; Watanabe, J.; Ishihara, K.
CS Department of Materials Engineering, School of Engineering, The University of Tokyo, Bunkyo, Tokyo, 113-8656, Japan

SO Biomacromolecules (2004), 5(2), 342-347
CODEN: BOMAF6; ISSN: 1525-7797
PB American Chemical Society
DT Journal
LA English
CC **9-16** (**Biochemical** Methods)
Section cross-reference(s): 7

AB We investigated the bioconjugation of enzymes on polymer nanoparticles covered with bioinert phosphorylcholine groups. A water-soluble amphiphilic phospholipid polymer (PMBN) was specially designed for preparation of nanoparticles and conjugation with enzymes on them. The PMBN was prepared by random copolymn. of 2-methacryloyloxyethyl phosphorylcholine (MPC), Bu methacrylate, and p-nitrophenylester bearing methacrylate. The PMBN was used as an emulsifier and a surface modifier to prepare the poly(L-lactic acid) nanoparticles by a solvent evaporation technique in aqueous medium. The nanoparticles covered with phosphorylcholine groups were stably dispersed in an aqueous solution and a phosphate buffered saline. The diameter and surface ζ-potential of the nanoparticles were ca. 200 Nm and -6 mV, resp. The p-nitrophenyl ester groups, which are active ester units for the amino groups of the protein, were located at the surface of the nanoparticles. Both acetylcholine esterase and choline oxidase were co-immobilized (dual-mode conjugation) by the reaction between the p-nitrophenyl ester group and the amino group of these enzymes. The enzymic reactions on the nanoparticles were followed using a microdialysis **biosensor** system with a microtype hydrogen peroxide electrode in the probe. The nanoparticles conjugated with these enzymes could detect the acetylcholine chloride as hydrogen peroxide, which is a product of the enzymic reactions on the surface of the nanoparticles in the probe. Namely, continuous enzyme reactions could be occurring on the surface of the nanoparticles. It is concluded that the nanoparticles are a promising tool for a highly sensitive and microdiagnostic system.

ST conjugation enzyme polymer nanoparticle covered phosphorylcholine group
IT Atomic force microscopy
Conjugation (molecular association)
Fluorometry
Nanoparticles
Zeta potential
(conjugation of enzymes on polymer nanoparticles covered with phosphorylcholine groups)
IT 60-31-1, Acetylcholine chloride 67-48-1, Choline chloride 7722-84-1, Hydrogen peroxide, analysis
RL: ANT (Analyte); ANST (Analytical study)
(conjugation of enzymes on polymer nanoparticles covered with phosphorylcholine groups)
IT 9000-81-1, E.C.3.1.1.7 9028-67-5, E.C.1.1.3.17
RL: ARU (Analytical role, unclassified); PEP (Physical, engineering or chemical process); PYP (Physical process); ANST (Analytical study); PROC (Process)
(conjugation of enzymes on polymer nanoparticles covered with phosphorylcholine groups)
IT **666711-04-2P**
RL: ARU (Analytical role, unclassified); PEP (Physical, engineering or chemical process); PYP (Physical process); **SPN (Synthetic preparation)**; ANST (Analytical study); **PREP (Preparation)**;

PROC (Process)
(conjugation of enzymes on polymer nanoparticles covered with phosphorylcholine groups)

IT 666711-01-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(conjugation of enzymes on polymer nanoparticles covered with phosphorylcholine groups)

RE.CNT 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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(2) Fisher, A; Alzheimer's and Parkinson's Diseases: Strategies for Research and Development 1986
(3) Ishihara, K; Colloid Surf B: Biointerfaces 2000, V18, P325 HCAPLUS
(4) Ishihara, K; J Biomed Mater Res 1990, V24, P1069 HCAPLUS
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(6) Ishihara, K; Polym Adv Technol 2000, V11, P626 HCAPLUS
(7) Ishihara, K; Polym J 1990, V22, P355 HCAPLUS
(8) Ishihara, K; Polym J 1999, V31, P1231 HCAPLUS
(9) Iwasaki, Y; J Biomed Mater Res 2001, V57, P74
(10) Konno, T; Biomaterials 2001, V22, P1883 HCAPLUS
(11) Larsson, N; Electrochim Acta 1998, V43, P3541 HCAPLUS
(12) Solovskij, M; Eur Polym J 2000, V36, P1127 HCAPLUS
(13) Torchilin, V; Biochim Biophy Acta 2001, V1511, P397 HCAPLUS
(14) Torto, N; Anal Chim Acta 1999, V379, P281 HCAPLUS
(15) Trubetskoy, V; Adv Drug Delivery Rev 1999, V37, P81 HCAPLUS

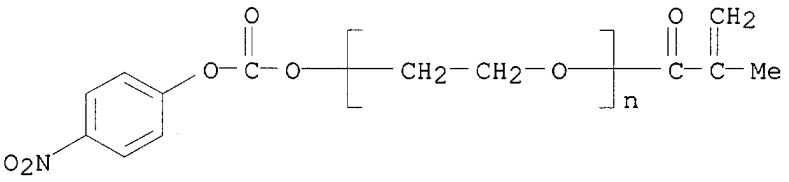
IT **666711-04-2P**
RL: ARU (Analytical role, unclassified); PEP (Physical, engineering or chemical process); PYP (Physical process); **SPN (Synthetic preparation)**; ANST (Analytical study); **PREP (Preparation)**;
PROC (Process)
(conjugation of enzymes on polymer nanoparticles covered with phosphorylcholine groups)

RN 666711-04-2 HCAPLUS

CN 3,5,8-Trioxa-4-phosphaundec-10-en-1-aminium, 4-hydroxy-N,N,N,10-tetramethyl-9-oxo-, inner salt, 4-oxide, polymer with butyl 2-methyl-2-propenoate and α-(2-methyl-1-oxo-2-propenyl)-ω-[[(4-nitrophenoxy)carbonyl]oxy]poly(oxy-1,2-ethanediyl), graft (9CI) (CA INDEX NAME)

CM 1

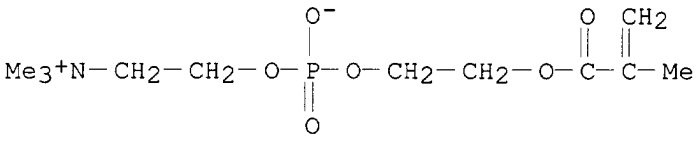
CRN 666711-01-9
CMF (C2 H4 O)n C11 H9 N O6
CCI PMS



CM 2

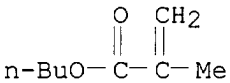
CRN 67881-98-5

CMF C11 H22 N O6 P



CM 3

CRN 97-88-1
CMF C8 H14 O2



L23 ANSWER 2 OF 17 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2004:139242 HCAPLUS
DN 140:207492
ED Entered STN: 20 Feb 2004
TI (Copy)Oil-based platemaking electrostatic ink-jet printing ink containing star block copolymer dispersion stabilizing resin for improved ink ejection stability
IN Kato, Eiichi
PA Fuji Photo Film Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 57 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C09D011-00
ICS B41J002-01; B41M005-00; B41C001-10
CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): **35**, 38
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2004051787	A2	20040219	JP 2002-211352	20020719
PRAI JP 2002-211352		20020719		

AB The oil-based platemaking electrostatic ink-jet printing ink comprises a chargeable resin particle dispersed in a nonaq. support solution having the elec. resistivity ≥109 Ω·cm and the **dielec.** constant ≤3.5. The resin particle is obtained from (A) ≥1 monofunctional monomer which is soluble in an nonaq. solvent but becomes soluble upon polymn, (B) ≥1 monofunctional monomer which is copolymerizable with said monomer (A) and has an acid group, ≥1 monofunctional macromer having a double bond at the end group copolymerizable with said monomer (A), having F- and/or Si-containing repeating unit, and having the weight average mol. weight ≤20,000, and a star-type copolymer dispersion stabilizing resin having ≥3 sp. block copolymer chains bonded to an

organic residue.

ST oil platemaking electrostatic ink jet printing star block copolymer; lithog printing plate ink dispersion stabilizing resin

IT Acrylic polymers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(F-containing; oil-based platemaking electrostatic ink-jet printing ink containing star block copolymer dispersion stabilizing resin for improved ink ejection stability)

IT Inks
(jet-printing; oil-based platemaking electrostatic ink-jet printing ink containing star block copolymer dispersion stabilizing resin for improved ink ejection stability)

IT Lithographic plates
(oil-based platemaking electrostatic ink-jet printing ink containing star block copolymer dispersion stabilizing resin for improved ink ejection stability)

IT 150551-83-0 150551-89-6 150551-92-1 150551-93-2 150551-97-6
154340-06-4 155161-59-4 155293-25-7 159967-38-1 159967-39-2
159967-41-6 159967-42-7 159967-43-8 216877-91-7
RL: RCT (Reactant); RACT (Reactant or reagent)
(core; preparation of star block copolymer for oil-based platemaking electrostatic ink-jet printing ink)

IT 150469-59-3P 159967-35-8P 159967-45-0P 159967-46-1P 159967-47-2P
159967-48-3P 159967-49-4P 159967-50-7P 159967-51-8P 159967-53-0P
159967-54-1P 159967-55-2P 159967-56-3P 216878-23-8P 524745-45-7P
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(oil-based platemaking electrostatic ink-jet printing ink containing star block copolymer dispersion stabilizing resin for improved ink ejection stability)

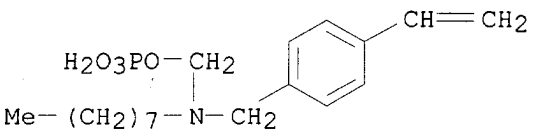
IT 96-33-3DP, Methyl acrylate, F-containing acrylic polymer 140-88-5DP, Ethyl acrylate, F-containing acrylic polymer 2495-37-6DP, Benzyl methacrylate, F-containing acrylic polymer 524745-47-9DP, F-containing acrylic polymer 524745-88-8DP, F-containing acrylic polymer **524745-90-2DP**, F-containing acrylic **polymer** 524745-92-4DP, F-containing acrylic polymer
524745-94-6DP, F-containing acrylic **polymer**
524745-96-8DP, F-containing acrylic **polymer**
524745-98-0DP, F-containing acrylic **polymer**
661482-71-9DP, F-containing acrylic **polymer**
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(oil-based platemaking electrostatic ink-jet printing ink containing star block **copolymer** dispersion stabilizing resin for improved ink ejection stability)

IT 159967-36-9P, Methyl acrylatemethyl methacrylate-octadecyl methacrylate block copolymer
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(star; oil-based platemaking electrostatic ink-jet printing ink containing star block copolymer dispersion stabilizing resin for improved ink ejection stability)

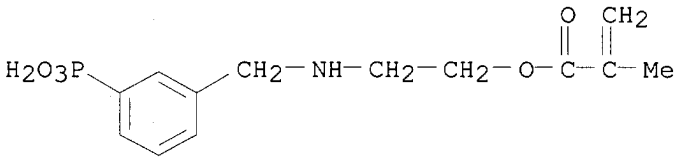
IT **524745-90-2DP**, F-containing acrylic **polymer**
524745-94-6DP, F-containing acrylic **polymer**
524745-96-8DP, F-containing acrylic **polymer**
524745-98-0DP, F-containing acrylic **polymer**
661482-71-9DP, F-containing acrylic **polymer**
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(oil-based platemaking electrostatic ink-jet printing ink containing star

block **copolymer** dispersion stabilizing resin for improved ink ejection stability)

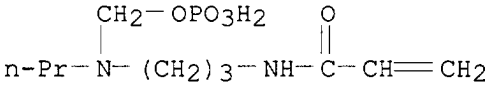
RN 524745-90-2 HCAPLUS
CN Methanol, [[(4-ethenylphenyl)methyl]octylamino]-, dihydrogen phosphate (ester) (9CI) (CA INDEX NAME)



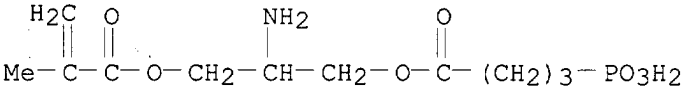
RN 524745-94-6 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 2-[[(3-phosphonophenyl)methyl]amino]ethyl ester (9CI) (CA INDEX NAME)



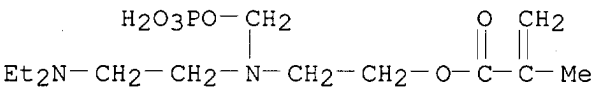
RN 524745-96-8 HCAPLUS
CN 2-Propenamide, N-[3-[[(phosphonooxy)methyl]propylamino]propyl]- (9CI) (CA INDEX NAME)



RN 524745-98-0 HCAPLUS
CN Butanoic acid, 4-phosphono-, 1-[2-amino-3-[(2-methyl-1-oxo-2-propenyl)oxy]propyl] ester (9CI) (CA INDEX NAME)



RN 661482-71-9 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 2-[[2-(diethylamino)ethyl][(phosphonooxy)methyl]amino]ethyl ester (9CI) (CA INDEX NAME)



L23 ANSWER 3 OF 17 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2004:134082 HCAPLUS
DN 140:190011
ED Entered STN: 19 Feb 2004
TI Oil-based ink for platemaking by electrostatic ink-jet printing method
IN Kato, Eiichi
PA Fuji Photo Film Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 66 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C09D011-00
ICS B41M005-00
CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 42
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004051763	A2	20040219	JP 2002-210572	20020719
PRAI	JP 2002-210572		20020719		

AB The ink contains chargeable resin particles dispersed in a water-free medium having elec. resistivity ≥109 Ω-cm and **dielec**. constant ≤3.5, wherein the resin particles are obtained by polymerizing nonaq. solns. containing (A) nonaq. solvent-soluble monofunctional monomers which become insol. after polymerization, (B) NR1R2- and PO3H2- and/or SO3H-containing monofunctional comonomers (R1, R2 = H, C1-22 hydrocarbyl, R1 and R2 may form ring), (MM) copolymerizable monofunctional micromonomers having main chains of F- and/or Si-containing substituent-containing repeating unit-containing polymers terminated for one side with defined polymerizable double bonds and weight-average mol. weight ≤2 + 104, and (P) nonaq. solvent-soluble dispersant polymers containing [Cb1HCb2(V0L)] [V0 = CO2, OCO, (CH2)rCO2, (CH2)rOCO, O, C6H4X; X = direct bond, O, OCO, CO2; r = 1-12; L = C8-32 alkyl or alkenyl, defined siloxane structure- or silyloxy-containing Si1-30 substituent; b1, b2 = H, halo, cyano, C1-7 hydrocarbyl, CO2H, etc.] in which main chains of the polymers are partially crosslinked. The ink shows stable delivery and forms clear image with high strength for the printing plate with high printability.
ST platemaking electrostatic ink jet printing oily ink; polymer particle oil based jet printing ink
IT Fluoropolymers, preparation
Polysiloxanes, preparation
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(acrylic, graft, particles; oil-based ink containing polymer particles for platemaking by electrostatic ink-jet printing method)
IT Inks
(jet-printing; oil-based ink containing polymer particles for platemaking by electrostatic ink-jet printing method)
IT Lithographic plates
(oil-based ink containing polymer particles for platemaking by electrostatic ink-jet printing method)
IT Macromonomers
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(oil-based ink containing polymer particles for platemaking by electrostatic ink-jet printing method)

IT Dispersing agents
(polymeric; oil-based ink containing polymer particles for platemaking by electrostatic ink-jet printing method)

IT **660426-31-3DP**, trimethylsilyl ether
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(comprised of actual and assumed monomers, particles; oil-based ink containing **polymer** particles for platemaking by electrostatic ink-jet printing method)

IT 920-46-7DP, Methacrylic chloride, ester with azobiscyanopentanol-modified ethylene glycol diacrylate-octadecyl acylate copolymer 4693-47-4DP, 4,4'-Azobis(4-cyanopentanol), reaction products with ethylene glycol diacrylate-octadecyl acrylate copolymer, ester with methacrylic chloride 5926-95-4DP, Glutaconic anhydride, reaction products with divinylbenzene-mercaptoethylamine-octadecyl methacrylate telomer 61255-17-2P, Dodecyl methacrylate-divinylbenzene copolymer 122324-74-7P, Divinylbenzene-octadecyl methacrylate copolymer 130805-21-9P, Divinylbenzene-tridecyl methacrylate copolymer 139720-57-3P 139720-64-2DP, Divinylbenzene-2-mercaptoethylamine-octadecyl methacrylate telomer, reaction products with glutaconic anhydride 148532-67-6P, Dodecyl methacrylate-octyl methacrylate-trivinylbenzene copolymer 148640-01-1P, Divinylbenzene-octadecyl methacrylate-thioglycolic acid telomer ester with 2-hydroxyethyl methacrylate 159446-42-1P 159446-44-3P 214772-24-4P, Divinylbenzene-2-mercaptoethanol-octadecyl methacrylate telomer ester with 2-carboxyethyl acrylate 214772-26-6P, Divinylbenzene-2-mercaptoethanol-octadecyl methacrylate telomer ester with α-chloroacrylic acid 214772-29-9P 218459-53-1P, Allyl methacrylate-dodecyl methacrylate-thioglycolic acid telomer ester with 2-hydroxyethyl methacrylate 218459-75-7P 218459-76-8P 218459-77-9DP, Ethylene glycol diacrylate-octadecyl acrylate copolymer, reaction products with azobiscyanopentanol, ester with methacrylic chloride 308283-76-3P, Docosyl methacrylate-polyethylene glycol diacrylate copolymer 524745-38-8P 657408-63-4P 657408-64-5P 657408-65-6P 658039-85-1P 660426-29-9P 660431-29-8P
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(dispersant; oil-based ink containing polymer particles for platemaking by electrostatic ink-jet printing method)

IT 312260-55-2P 312260-57-4P 312260-79-0P 312260-82-5P 312260-85-8P 312260-87-0P 312260-89-2P 312260-91-6P 312260-93-8P 312260-96-1P 312261-02-2P 312261-17-9P 312261-21-5P 312261-24-8P 312261-27-1P 312261-30-6P 477719-06-5DP, butanoic acid terminated, ester with glycidyl methacrylate 660431-40-3P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(macromer; oil-based ink containing polymer particles for platemaking by electrostatic ink-jet printing method)

IT 557799-78-7P 557799-79-8P 557799-80-1P 660426-30-2P 660426-32-4P 660426-33-5P 660426-34-6P 660426-37-9P 660426-38-0P 660426-39-1P 660426-40-4P 660426-41-5P 660426-42-6P 660426-43-7P 660426-44-8P 660426-45-9P 660426-46-0P 660426-47-1P 660426-48-2P 660426-49-3P 660426-50-6P 660426-51-7P 660426-52-8P 660426-53-9P
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(particles; oil-based ink containing polymer particles for platemaking by electrostatic ink-jet printing method)

IT **660426-31-3DP**, trimethylsilyl ether
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

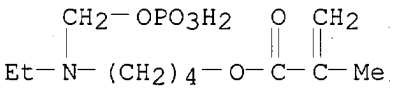
(comprised of actual and assumed monomers, particles; oil-based ink containing **polymer** particles for platemaking by electrostatic ink-jet printing method)

RN 660426-31-3 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 4-[ethyl[(phosphonooxy)methyl]amino]butyl ester, polymer with dimethylsilanediol, methyl 2-methyl-2-propenoate and methyl 2-propenoate, graft (9CI) (CA INDEX NAME)

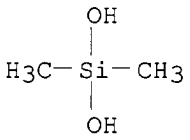
CM 1

CRN 524745-45-7
CMF C11 H22 N O6 P



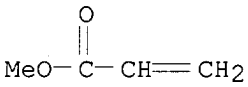
CM 2

CRN 1066-42-8
CMF C2 H8 O2 Si



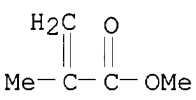
CM 3

CRN 96-33-3
CMF C4 H6 O2



CM 4

CRN 80-62-6
CMF C5 H8 O2



L23 ANSWER 4 OF 17 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2002:807565 HCAPLUS
DN 137:331033
ED Entered STN: 23 Oct 2002
TI Liquid developer containing dispersion resin particles for electrophotographic printing platemaking system
IN Kato, Eiichi
PA Fuji Photo Film Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 37 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM G03G009-13
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): **35**, 38
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002311654	A2	20021023	JP 2001-111587	20010410
PRAI	JP 2001-111587		20010410		

AB The liquid developer comprises resin particles dispersed in a nonaq. solvent having an elec. resistivity ≥109 Ω·cm and a **dielec.** constant ≤3.5, wherein the resin particles have a multilayer structure and is made of a polymer which contains a unit [b1HCCb2(V0-L)] (V0 = COO, OCO, etc.; b1,2 = H, halo, cyano, etc.; and L = C8-32 alkyl, alkenyl) and a monofunctional monomer soluble in the solvent but becoming insol. upon polymerization and is obtained by seed polymerization in the presence of seed grains having an average grain diameter 0.05-1.0 μm. The liquid developer made the development-fixing processes faster and exhibited excellent development property for an electrophotog. plate making system using a large master plate.

ST liq developer dispersion resin particle electrophotog printing platemaking; seed polymn polymer liq developer dispersion resin particle

IT Polyesters, preparation
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(dispersion resin particle; liquid developer containing dispersion resin particles for electrophotog. printing platemaking system)

IT Printing plates
(liquid developer containing dispersion resin particles for electrophotog. printing platemaking system)

IT Electrophotographic developers
(liquid; liquid developer containing dispersion resin particles for electrophotog. printing platemaking system)

IT Polymerization
(seed; liquid developer containing dispersion resin particles for electrophotog. printing platemaking system)

IT 85533-57-9P, Hexadecyl methacrylate-vinyl acetate copolymer 308283-85-4P 473595-22-1P 473595-23-2P 473595-25-4P **473595-26-5DP**, ester **473595-27-6DP**, ester **473595-28-7DP**, ester **473595-29-8DP**, ester **473595-30-1DP**, ester **473595-31-2DP**, ester **473595-32-3DP**, ester **473595-33-4DP**, ester **473595-34-5DP**, ester 473595-35-6DP, ester 473595-36-7DP, ester 473595-37-8DP, ester 473595-38-9DP, ester 473595-40-3DP, ester 473595-41-4DP, ester **473595-42-5DP**, ester **473595-43-6DP**, ester 473595-44-7DP, ester 473595-45-8DP, ester 473595-46-9DP, ester 473595-47-0DP, ester 473595-48-1DP, ester

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(dispersion resin particle; liquid developer containing dispersion resin particles for electrophotog. printing platemaking system)

IT 34888-27-2P, Dodecyl methacrylate-2-hydroxyethyl methacrylate copolymer
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(dispersion stabilizing resin; liquid developer containing dispersion resin particles for electrophotog. printing platemaking system)

IT 473595-24-3DP, ester
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(liquid developer containing dispersion resin particles for electrophotog. printing platemaking system)

IT 25053-53-6, Nucrel N699
RL: TEM (Technical or engineered material use); USES (Uses)
(seed grain; liquid developer containing dispersion resin particles for electrophotog. printing platemaking system)

IT 9003-20-7P, Polyvinyl acetate
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(seed polymer; liquid developer containing dispersion resin particles for electrophotog. printing platemaking system)

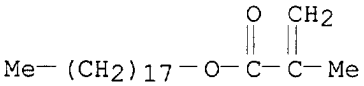
IT **473595-26-5DP**, ester **473595-27-6DP**, ester
473595-28-7DP, ester **473595-29-8DP**, ester
473595-30-1DP, ester **473595-31-2DP**, ester
473595-32-3DP, ester **473595-33-4DP**, ester
473595-34-5DP, ester **473595-42-5DP**, ester
473595-43-6DP, ester
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(dispersion resin particle; liquid developer containing dispersion resin particles for electrophotog. printing platemaking system)

RN 473595-26-5 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-(diethylamino)ethyl ester, polymer with dodecyl 2-methyl-2-propenoate, 2-hydroxyethyl 2-methyl-2-propenoate, methyl 2-methyl-2-propenoate, methyl 2-propenoate, octadecyl 2-methyl-2-propenoate and 2-(phosphonooxy)ethyl 2-propenoate (9CI) (CA INDEX NAME)

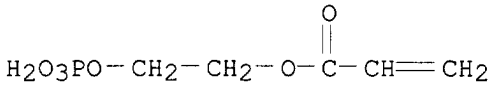
CM 1

CRN 32360-05-7
CMF C22 H42 O2



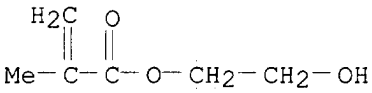
CM 2

CRN 32120-16-4
CMF C5 H9 O6 P



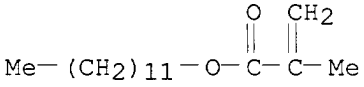
CM 3

CRN 868-77-9
CMF C6 H10 O3



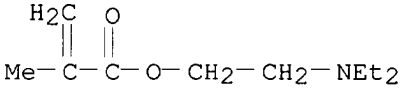
CM 4

CRN 142-90-5
CMF C16 H30 O2



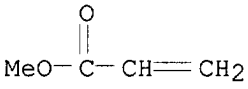
CM 5

CRN 105-16-8
CMF C10 H19 N O2



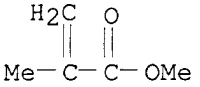
CM 6

CRN 96-33-3
CMF C4 H6 O2



CM 7

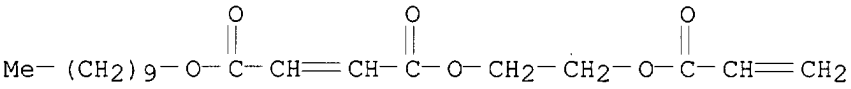
CRN 80-62-6
CMF C5 H8 O2



RN 473595-27-6 HCAPLUS
CN 2-Butenedioic acid, decyl 2-[(1-oxo-2-propenyl)oxy]ethyl ester, polymer with 2-(diethylamino)ethyl 2-methyl-2-propenoate, methyl 2-methyl-2-propenoate, methyl 2-propenoate, 2-(phosphonooxy)ethyl 2-propenoate and tridecyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

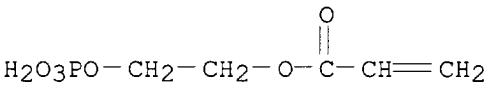
CM 1

CRN 305814-46-4
CMF C19 H30 O6



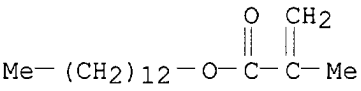
CM 2

CRN 32120-16-4
CMF C5 H9 O6 P



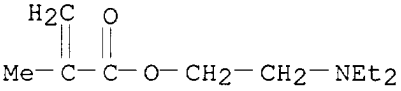
CM 3

CRN 2495-25-2
CMF C17 H32 O2



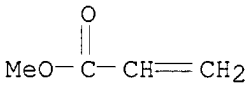
CM 4

CRN 105-16-8
CMF C10 H19 N O2



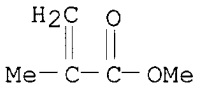
CM 5

CRN 96-33-3
CMF C4 H6 O2



CM 6

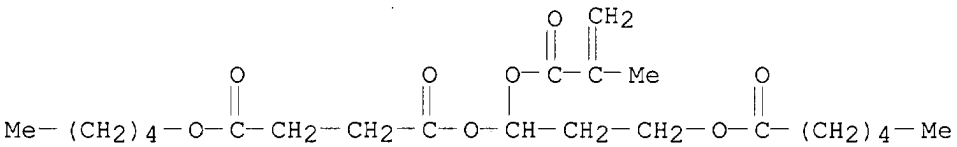
CRN 80-62-6
CMF C5 H8 O2



RN 473595-28-7 HCAPLUS
CN Butanedioic acid, 1-[(2-methyl-1-oxo-2-propenyl)oxy]-3-[(1-oxohexyl)oxy]propyl pentyl ester, polymer with 2-(diethylamino)ethyl 2-methyl-2-propenoate, methyl 2-methyl-2-propenoate, methyl 2-propenoate, 2-(phosphonooxy)ethyl 2-propenoate and tridecyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

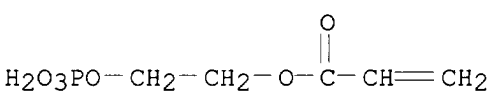
CM 1

CRN 305814-48-6
CMF C22 H36 O8



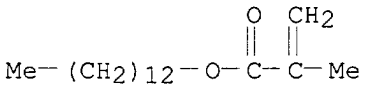
CM 2

CRN 32120-16-4
CMF C5 H9 O6 P



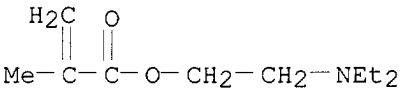
CM 3

CRN 2495-25-2
CMF C17 H32 O2



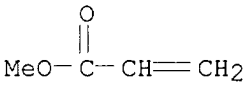
CM 4

CRN 105-16-8
CMF C10 H19 N O2



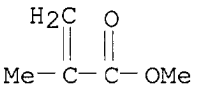
CM 5

CRN 96-33-3
CMF C4 H6 O2



CM 6

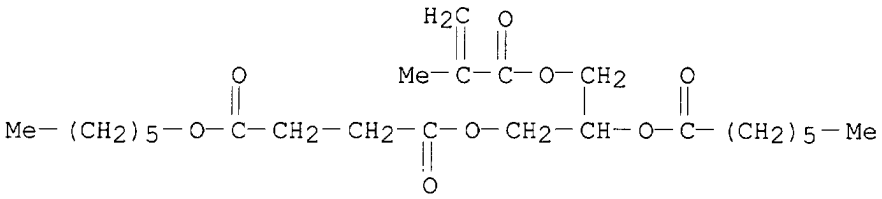
CRN 80-62-6
CMF C5 H8 O2



RN 473595-29-8 HCAPLUS
CN Butanedioic acid, hexyl 3-[(2-methyl-1-oxo-2-propenyl)oxy]-2-[(1-oxoheptyl)oxy]propyl ester, polymer with 2-(diethylamino)ethyl 2-methyl-2-propenoate, methyl 2-methyl-2-propenoate, methyl 2-propenoate, 2-(phosphonooxy)ethyl 2-propenoate and tridecyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

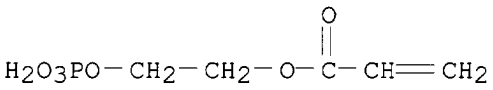
CM 1

CRN 305814-50-0
CMF C24 H40 O8



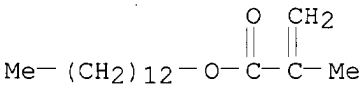
CM 2

CRN 32120-16-4
CMF C5 H9 O6 P



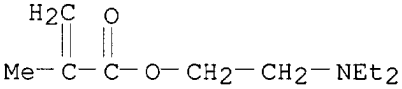
CM 3

CRN 2495-25-2
CMF C17 H32 O2



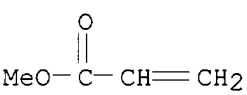
CM 4

CRN 105-16-8
CMF C10 H19 N O2



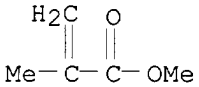
CM 5

CRN 96-33-3
CMF C4 H6 O2



CM 6

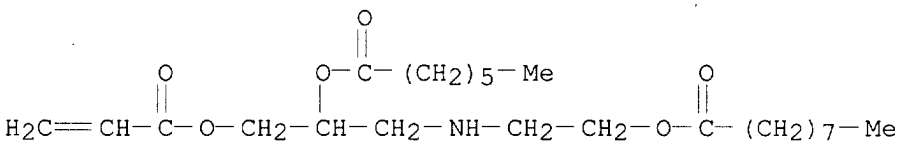
CRN 80-62-6
CMF C5 H8 O2



RN 473595-30-1 HCAPLUS
CN Nonanoic acid, 2-[[2-[(1-oxoheptyl)oxy]-3-[(1-oxo-2-propenyl)oxy]propyl]amino]ethyl ester, polymer with 2-(diethylamino)ethyl 2-methyl-2-propenoate, methyl 2-methyl-2-propenoate, methyl 2-propenoate, 2-(phosphonooxy)ethyl 2-propenoate and tridecyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

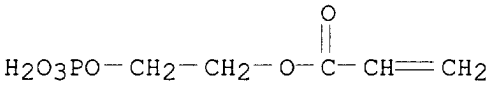
CM 1

CRN 305814-52-2
CMF C24 H43 N O6



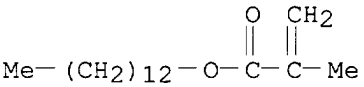
CM 2

CRN 32120-16-4
CMF C5 H9 O6 P



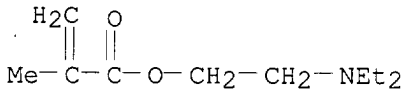
CM 3

CRN 2495-25-2
CMF C17 H32 O2



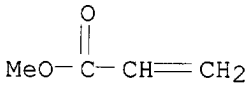
CM 4

CRN 105-16-8
CMF C10 H19 N O2



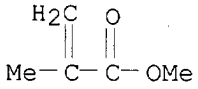
CM 5

CRN 96-33-3
CMF C4 H6 O2



CM 6

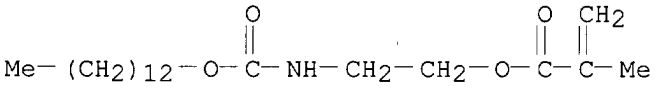
CRN 80-62-6
CMF C5 H8 O2



RN 473595-31-2 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 2-(diethylamino)ethyl ester, polymer with methyl 2-methyl-2-propenoate, methyl 2-propenoate, 2-(phosphonooxy)ethyl 2-propenoate, tridecyl 2-methyl-2-propenoate and 2-[[(tridecyloxy)carbonyl]amino]ethyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

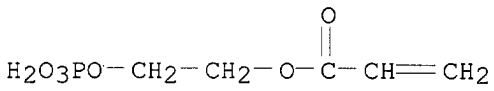
CM 1

CRN 305814-54-4
CMF C20 H37 N O4



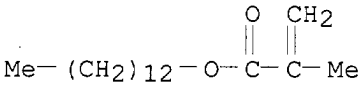
CM 2

CRN 32120-16-4
CMF C5 H9 O6 P



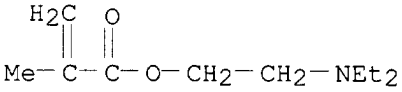
CM 3

CRN 2495-25-2
CMF C17 H32 O2



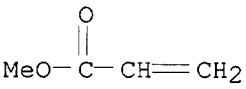
CM 4

CRN 105-16-8
CMF C10 H19 N O2



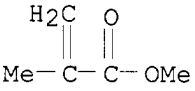
CM 5

CRN 96-33-3
CMF C4 H6 O2



CM 6

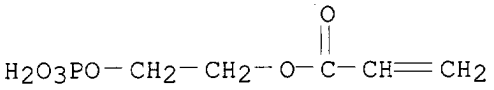
CRN 80-62-6
CMF C5 H8 O2



RN 473595-32-3 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 2-(diethylamino)ethyl ester, polymer with dodecyl 2-propenoate, methyl 2-methyl-2-propenoate, methyl 2-propenoate, 2-(phosphonooxy)ethyl 2-propenoate and tridecyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

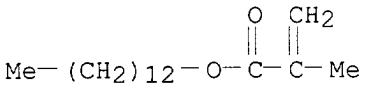
CM 1

CRN 32120-16-4
CMF C5 H9 O6 P



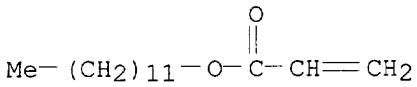
CM 2

CRN 2495-25-2
CMF C17 H32 O2



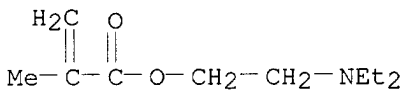
CM 3

CRN 2156-97-0
CMF C15 H28 O2



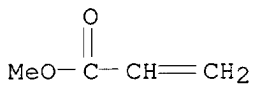
CM 4

CRN 105-16-8
CMF C10 H19 N O2



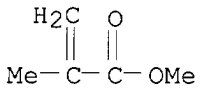
CM 5

CRN 96-33-3
CMF C4 H6 O2



CM 6

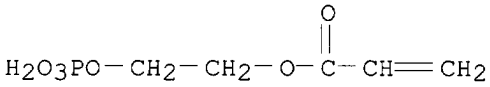
CRN 80-62-6
CMF C5 H8 O2



RN 473595-33-4 HCAPLUS
CN Decanoic acid, 2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl ester, polymer with 2-(diethylamino)ethyl 2-methyl-2-propenoate, methyl 2-methyl-2-propenoate, methyl 2-propenoate, 2-(phosphonooxy)ethyl 2-propenoate and tridecyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

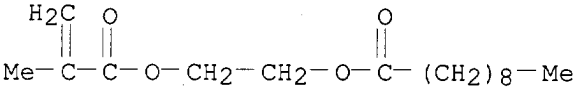
CM 1

CRN 32120-16-4
CMF C5 H9 O6 P



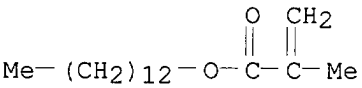
CM 2

CRN 14792-62-2
CMF C16 H28 O4



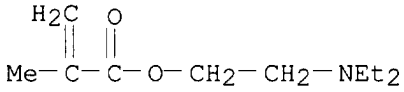
CM 3

CRN 2495-25-2
CMF C17 H32 O2



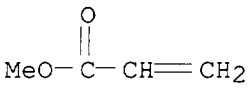
CM 4

CRN 105-16-8
CMF C10 H19 N O2



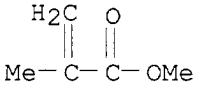
CM 5

CRN 96-33-3
CMF C4 H6 O2



CM 6

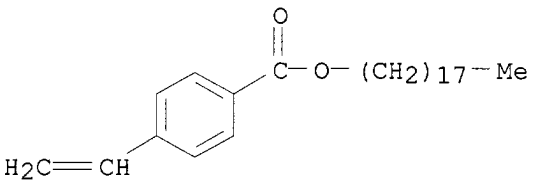
CRN 80-62-6
CMF C5 H8 O2



RN 473595-34-5 HCAPLUS
CN Benzoic acid, 4-ethenyl-, octadecyl ester, polymer with 2-(diethylamino)ethyl 2-methyl-2-propenoate, methyl 2-methyl-2-propenoate, methyl 2-propenoate, 2-(phosphonooxy)ethyl 2-propenoate and tridecyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

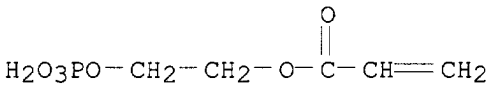
CM 1

CRN 308338-67-2
CMF C27 H44 O2



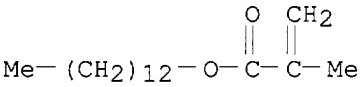
CM 2

CRN 32120-16-4
CMF C5 H9 O6 P



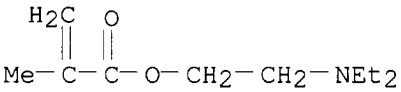
CM 3

CRN 2495-25-2
CMF C17 H32 O2



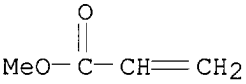
CM 4

CRN 105-16-8
CMF C10 H19 N O2



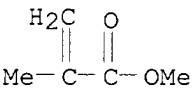
CM 5

CRN 96-33-3
CMF C4 H6 O2



CM 6

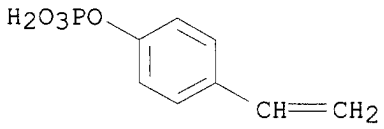
CRN 80-62-6
CMF C5 H8 O2



RN 473595-42-5 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 2-(diethylamino)ethyl ester, polymer with 4-ethenylphenyl dihydrogen phosphate, methyl 2-methyl-2-propenoate, methyl 2-propenoate, octadecyl 2-methyl-2-propenoate and tridecyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

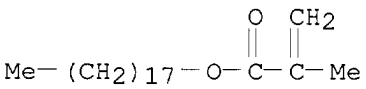
CM 1

CRN 80122-59-4
CMF C8 H9 O4 P



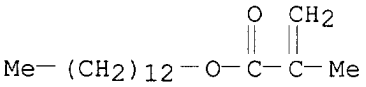
CM 2

CRN 32360-05-7
CMF C22 H42 O2



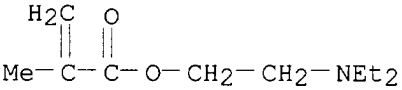
CM 3

CRN 2495-25-2
CMF C17 H32 O2



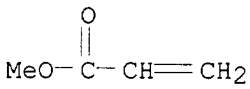
CM 4

CRN 105-16-8
CMF C10 H19 N O2



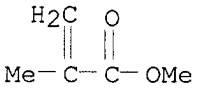
CM 5

CRN 96-33-3
CMF C4 H6 O2



CM 6

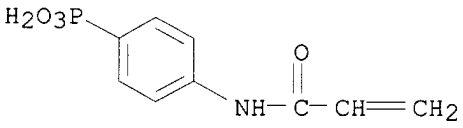
CRN 80-62-6
CMF C5 H8 O2



RN 473595-43-6 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 2-(diethylamino)ethyl ester, polymer with methyl 2-methyl-2-propenoate, methyl 2-propenoate, octadecyl 2-methyl-2-propenoate, [4-[(1-oxo-2-propenyl)amino]phenyl]phosphonic acid and tridecyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

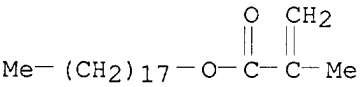
CM 1

CRN 149234-87-7
CMF C9 H10 N O4 P



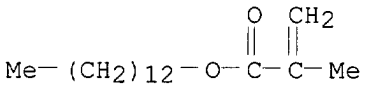
CM 2

CRN 32360-05-7
CMF C22 H42 O2



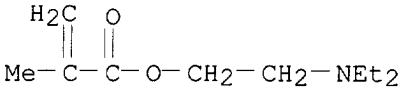
CM 3

CRN 2495-25-2
CMF C17 H32 O2



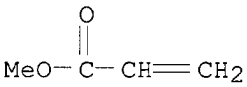
CM 4

CRN 105-16-8
CMF C10 H19 N O2



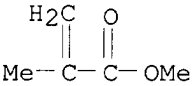
CM 5

CRN 96-33-3
CMF C4 H6 O2



CM 6

CRN 80-62-6
CMF C5 H8 O2



L23 ANSWER 5 OF 17 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2002:748408 HCAPLUS
DN 137:302107
ED Entered STN: 03 Oct 2002
TI Electrostatographic liquid developers for making electrographic printing plates
IN Kato, Eiichi
PA Fuji Photo Film Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 33 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM G03G009-13
ICS C08F291-00
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): **35**

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002287434	A2	20021003	JP 2001-85195	20010323
PRAI	JP 2001-85195		20010323		

AB The title developer contains dispersed resin particles, which are prepared from monomers in an aprotic solvent in the present of dispersion-stabilizing resin, in an aprotic solvent of ≥109 Ω·cm and of ≤3.5 **dielec**. constant, wherein the dispersed resin particles are made of monomers: a monomer having a functional group, which is soluble in an aprotic solvent and becomes insol. in the solvent after the polymerization; a monomer having -N(R1)(R2) group (R1-2 = H, C1-22 hydrocarbon); and a monomer having an acidic group chosen from -PO3H2, -SO3H, and -SO2H, wherein the dispersion stabilizing resin is made of a star burst polymer, which has ≥3 A-B block polymer chains connected to a core organic group and 2X104-1X106 weight average mol. weight The block A is made of a monomer having a functional group, which is soluble in an aprotic solvent and becomes insol. in the solvent after the polymerization and a monomer having polar group chosen from phosphono, carboxyl, sulfo, hydroxyl, formyl, amino, -P(=O)(OH)E1 (E1 = hydrocarbon, oxyhydrocarbon), and cyclic acid anhydride. The block B has [-CH(b1)-C(B2)(A-L)]- (A = -COO-, -(CH2)xCOO-, -(CH2)xOCO- (x = 1-3 integer), etc. L = C≥8aliphatics, B1-2 = H, halo, cyano, C1-7 hydrocarbon, etc.). The developer provides the rapid development/fixing process for large electrophotog. printing plate masters and shows the good characteristics as a liquid developers.

ST electrostatog liq developer electrog printing plate

IT Printing plates
(electrog.; electrostatog. liquid developers for making electrog. printing plates)

IT Electrographic developers
(electrostatog. liquid developers for making electrog. printing plates)

IT Dendritic polymers
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(electrostatog. liquid developers for making electrog. printing plates)

IT 150551-83-0 150551-89-6 150551-92-1 150551-93-2 150551-97-6 154340-06-4 155293-25-7 159967-38-1 159967-39-2 159967-40-5 159967-41-6 159967-42-7 159967-43-8 159967-44-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(core; electrostatog. liquid developers for making electrog. printing plates)

IT 159967-35-8 159967-45-0, Styrene-4-methylstyrene-octadecyl methacrylate-dodecyl acrylate block copolymer 159967-46-1 159967-47-2 159967-48-3 159967-49-4 159967-50-7 159967-51-8 159967-52-9 159967-53-0 159967-54-1 159967-55-2 159967-56-3, Styrene-4-hydroxystyrene-tetradecyl methacrylate block copolymer 467435-80-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(dendritic; electrostatog. liquid developers for making electrog. printing plates)

IT 150469-20-8P, Methyl methacrylate-methyl acrylate-stearyl acrylate block copolymer
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(dendritic; electrostatog. liquid developers for making electrog.

printing plates)

IT 9003-20-7, Vinyl acetate homopolymer
RL: RCT (Reactant); RACT (Reactant or reagent)
(resin in developer; electrostatog. liquid developers for making electrog. printing plates)

IT 26246-92-4P, Dodecyl acrylate homopolymer 29500-86-5P, Decyl acrylate homopolymer 41630-11-9P, Tridecyl methacrylate homopolymer 80122-60-7P 329914-76-3P 442156-57-2P, Methyl methacrylate-methyl acrylate-2-(N,N-dimethylamino)ethyl methacrylate-octadecyl acrylate-2-phosphonoethyl methacrylate copolymer **467435-84-3DP**, Me methacrylate/ethyl acrylate/2-(N,N-diethylamino)ethyl acrylate/2,3-dioctanoyloxypropyl methacrylate/4-phosphobutyl acrylate **copolymer** 467435-85-4P 467435-86-5P 467435-88-7P 467435-90-1P 467435-91-2P 467435-92-3P 467435-93-4P 467435-95-6P 467435-96-7P 467435-98-9P 467436-00-6P 467436-02-8P
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(resin in developer; electrostatog. liquid developers for making electrog. printing plates)

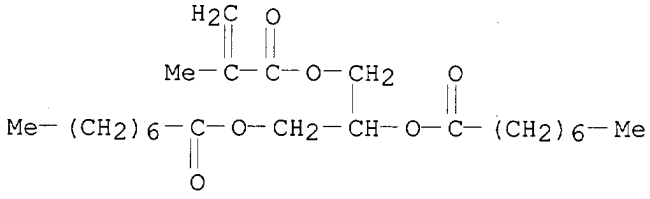
IT **467435-84-3DP**, Me methacrylate/ethyl acrylate/2-(N,N-diethylamino)ethyl acrylate/2,3-dioctanoyloxypropyl methacrylate/4-phosphobutyl acrylate **copolymer**
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(resin in developer; electrostatog. liquid developers for making electrog. printing plates)

RN 467435-84-3 HCAPLUS

CN Octanoic acid, 1-[[(2-methyl-1-oxo-2-propenyl)oxy]methyl]-1,2-ethanediyl ester, polymer with 2-(diethylamino)ethyl 2-propenoate, methyl 2-methyl-2-propenoate, methyl 2-propenoate and 4-(phosphonooxy)butyl 2-propenoate (9CI) (CA INDEX NAME)

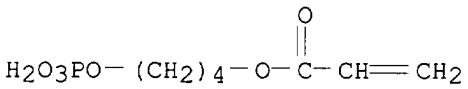
CM 1

CRN 154732-35-1
CMF C23 H40 O6



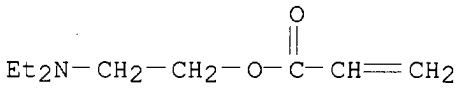
CM 2

CRN 110507-31-8
CMF C7 H13 O6 P



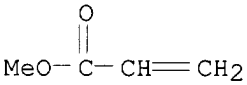
CM 3

CRN 2426-54-2
CMF C9 H17 N O2



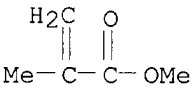
CM 4

CRN 96-33-3
CMF C4 H6 O2



CM 5

CRN 80-62-6
CMF C5 H8 O2



L23 ANSWER 6 OF 17 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2002:638105 HCAPLUS
DN 137:181915
ED Entered STN: 23 Aug 2002
TI Phosphorus-containing polymers for optical signal **transducers**
IN Dorn, Ingmar; Kohler, Burkhard
PA Germany
SO U.S. Pat. Appl. Publ., 12 pp.
CODEN: USXXCO
DT Patent
LA English
IC ICM G02B006-22
ICS C08K005-49
NCL 385128000
CC **9-2** (**Biochemical** Methods)
Section cross-reference(s): **3**, 7, 15, 38, 79, 80
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002114604	A1	20020822	US 2002-81628	20020220
	DE 10108483	A1	20020905	DE 2001-10108483	20010222
	WO 2002068481	A1	20020906	WO 2002-EP1399	20020211

applicants

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

EP 1366088 A1 20031203 EP 2002-704708 20020211
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR

PRAI DE 2001-10108483 A 20010222
WO 2002-EP1399 W 20020211

AB Phosphorus-containing polymers suitable for coating **dielec.** surfaces are described by the general formulas P(A)m(F)n1(U)o1 (I) and P(A)m(UFn2)o2 (II) (P = (un)branched, (un)crosslinked homo- or heteropolymeric polymer component; A = identical or different phosphorus-containing groups bonded to P; m = .apprx.3-1000, F = identical or different functional groups bonded directly or indirectly to P; n1 = .apprx.1-1000; n2 = .apprx.1-100, U = identical or different (un)branched (un)crosslinked oligomeric or polymeric segments made up of identical or different monomers which are bonded to P; o1 = .apprx.0-1000, o2 = .apprx.1-1000). Methods for preparing the polymers are described which entail copolymg. a monomer containing a phosphorus-containing group A, or a plurality of identical or different monomers containing identical or different phosphorus-containing groups A, with a monomer containing a functional group F, or a plurality of identical or different monomers containing identical or different functional groups F, and optionally, a monomer containing a segment U, or a plurality of identical or different monomers containing identical or different segments U, to form I, or with a monomer containing a unit (UFn2)o2, or a plurality of identical or different monomers containing identical or different units of the formula (UFn2)o2, to form II. The use of the polymers for coating **dielec.** materials, in particular **dielec. waveguides**, and optical signal **transducers** with dieled. **waveguides** coated by the polymers are also described. The optical signal **transducers** having a coated **dielec. waveguides** may be used for immobilizing chemical and/or biochem. recognition elements.

ST phosphorus contg polymer prepn; **dielec waveguide** coating phosphorus contg polymer; optical signal **transducer** phosphorus contg polymer coated **dielec waveguide**

IT Antibodies and Immunoglobulins
RL: ARG (Analytical reagent use); DEV (Device component use); ANST (Analytical study); USES (Uses)
(immobilized; phosphorus-containing polymers and their preparation and their use for coating **dielec. waveguides** and optical signal **transducers** using the coated **waveguides**)

IT **Biosensors**
(**immunosensors**; phosphorus-containing polymers and their preparation and their use for coating **dielec. waveguides** and optical signal **transducers** using the coated **waveguides**)

IT **Biosensors**
(optical; phosphorus-containing polymers and their preparation and their use for

coating **dielec. waveguides** and optical signal **transducers** using the coated **waveguides**)

IT Immobilization, molecular or cellular
Optical **sensors**
Waveguides
(phosphorus-containing polymers and their preparation and their use for coating **dielec. waveguides** and optical signal **transducers** using the coated **waveguides**)

IT Polyphosphoric acids
RL: IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)
(reaction products with polymers; phosphorus-containing polymers and their preparation and their use for coating **dielec. waveguides** and optical signal **transducers** using the coated **waveguides**)

IT Fatty acids, preparation
RL: IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)
(soya, reaction products with glycidol and phosphoric acid; phosphorus-containing polymers and their preparation and their use for coating **dielec. waveguides** and optical signal **transducers** using the coated **waveguides**)

IT 1314-23-4, Zirconium oxide, uses 1314-61-0, Tantalum oxide 1344-28-1, Aluminum oxide, uses 12055-23-1, Hafnium oxide 13463-67-7, Titanium oxide, uses
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(phosphorus-containing polymers and their preparation and their use for coating **dielec. waveguides** and optical signal **transducers** using the coated **waveguides**)

IT 108-31-6DP, Maleic Acid Anhydride, reaction products with polyglycidols 556-52-5DP, Glycidol, reaction products with fatty acids and phosphoric acid **1066-51-9DP**, Aminomethanephosphonic acid, reaction products with **polymers 1746-03-8DP**, Vinylphosphonic acid, reaction products with polyglycidols **7664-38-2DP**, Phosphoric acid, reaction products with polylysine salts **7664-38-2DP**, Phosphoric acid, reaction products with **polymers** 9002-89-5DP, Polyvinyl alcohol, reaction products with polyphosphoric acid 9011-16-9DP, Maleic anhydride-methyl vinyl ether copolymer, reaction products with aminomethanephosphonic acid 9041-77-4P, Dextran phosphate **17261-34-6DP**, Iminobismethylene Phosphonic Acid, reaction products with polyglycidols 21282-97-3DP, reaction products with polyglycidols and vinylphosphonic acid 25988-63-0DP, Poly-L-lysine hydrobromide, reaction products with phosphoric acid 26588-20-5DP, reaction products with phosphoric acid 69680-04-2DP, reaction products with phosphoric acid 98980-94-0DP, reaction products with iminobismethylene phosphonic acid and maleic acid anhydride **449188-13-0P**
RL: **IMF (Industrial manufacture)**; PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); **PREP (Preparation)**; PROC (Process); USES (Uses)
(phosphorus-containing **polymers** and their preparation and their use for coating **dielec. waveguides** and optical signal **transducers** using the coated **waveguides**)

IT 156-57-0 13598-36-2, Phosphonic acid

RL: RCT (Reactant); RACT (Reactant or reagent)
(phosphorus-containing polymers and their preparation and their use for coating
dielec. waveguides and optical signal
transducers using the coated **waveguides**)

IT **1066-51-9DP**, Aminomethanephosphonic acid, reaction products with **polymers** **1746-03-8DP**, Vinylphosphonic acid, reaction products with polyglycidols **7664-38-2DP**, Phosphoric acid, reaction products with polylysine salts **17261-34-6DP**, Iminobismethylene Phosphonic Acid, reaction products with polyglycidols **449188-13-0P**
RL: **IMF (Industrial manufacture)**; PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); **PREP (Preparation)**; PROC (Process); USES (Uses)
(phosphorus-containing **polymers** and their preparation and their use for coating **dielec. waveguides** and optical signal
transducers using the coated **waveguides**)

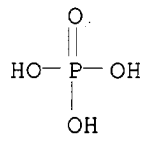
RN 1066-51-9 HCAPLUS
CN Phosphonic acid, (aminomethyl)- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

$H_2N-CH_2-PO_3H_2$

RN 1746-03-8 HCAPLUS
CN Phosphonic acid, ethenyl- (9CI) (CA INDEX NAME)

$H_2C=CH-PO_3H_2$

RN 7664-38-2 HCAPLUS
CN Phosphoric acid (7CI, 8CI, 9CI) (CA INDEX NAME)



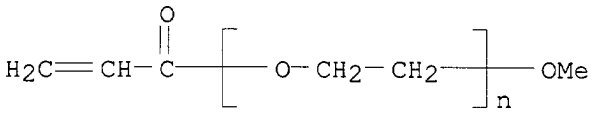
RN 17261-34-6 HCAPLUS
CN Phosphonic acid, [iminobis(methylene)]bis- (9CI) (CA INDEX NAME)

$H_2O_3P-CH_2-NH-CH_2-PO_3H_2$

RN 449188-13-0 HCAPLUS
CN Butanoic acid, 3-oxo-, 2-[(2-methyl-1-oxo-2-propenyl)oxy]ethyl ester, polymer with ethenylphosphonic acid and α-(1-oxo-2-propenyl)-ω-methoxypoly(oxy-1,2-ethanediyl) (9CI) (CA INDEX NAME)

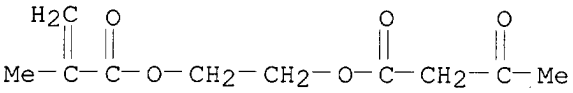
CM 1

CRN 32171-39-4
CMF (C2 H4 O)n C4 H6 O2
CCI PMS



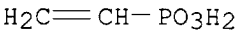
CM 2

CRN 21282-97-3
CMF C10 H14 O5



CM 3

CRN 1746-03-8
CMF C2 H5 O3 P



L23 ANSWER 7 OF 17 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2001:371617 HCAPLUS
DN 135:6996
ED Entered STN: 23 May 2001
TI Oil-based inks with good deliverability and image-forming properties for electrostatic ink-jet printing
IN Kato, Eiichi
PA Fuji Photo Film Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 48 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C09D011-00
ICS B41J002-01; B41M005-00
CC 42-12 (Coatings, Inks, and Related Products)
Section cross-reference(s): 74
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001139860	A2	20010522	JP 2000-261060	20000830
PRAI	JP 1999-246120	A	19990831		

AB The inks dispersed in a nonaq. medium having elec. resistance ≥109 Ω-cm and **dielec**. constant ≤3.5 contain resin particles manufactured by polymerizing solns. containing (A) ≥1 nonaq. solvent-soluble monofunctional monomers which become insol. in the nonaq. solvents after being polymerized, (B) ≥1 macromonomers (Mw ≤2 x 104) having repeating units containing fluoro and/or silyl groups and terminated at one end with polymerizable double bond, and (C) ≥1

partially crosslinked and nonaq. solvent-soluble polymeric dispersion stabilizers. Thus, vinyl acetate was polymerized with Silaplane FM 0721 (methacrylate- and trimethylsilyl-terminated polydimethylsiloxane) in the presence of octadecyl methacrylate-divinylbenzene copolymer in Isopar H (isoalkanes) and filtered to give particles, which was dispersed with alkali blue dispersion in Isopar E (isoalkane) to give an ink.

ST oil based ink polysiloxane graft deliverability; jet printing ink electrostatic polysiloxane dispersion; vinylbenzene octadecyl methacrylate dispersant polysiloxane ink; vinyl acetate polydimethylsiloxane macromonomer graft ink

IT Polysiloxanes, uses
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(graft polymers, acrylic; oil-based inks with good deliverability and image-forming properties for electrostatic ink-jet printing)

IT Inks
(jet-printing; oil-based inks with good deliverability and image-forming properties for electrostatic ink-jet printing)

IT Inks
(lithog.; oil-based inks with good deliverability and image-forming properties for electrostatic ink-jet printing)

IT Telomers (polymers)
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(oil-based inks with good deliverability and image-forming properties for electrostatic ink-jet printing)

IT Inks
(oil-based; oil-based inks with good deliverability and image-forming properties for electrostatic ink-jet printing)

IT Dispersing agents
(reactive, macromer; oil-based inks with good deliverability and image-forming properties for electrostatic ink-jet printing)

IT 61255-17-2P, Divinylbenzene-dodecyl methacrylate copolymer 122324-74-7P, Divinylbenzene-octadecyl methacrylate copolymer 130805-26-4P, Divinylbenzene-hexadecyl methacrylate copolymer 148532-67-6P, Dodecyl methacrylate-octyl methacrylate-trivinylbenzene copolymer 148532-68-7P, Butyl methacrylate-ethylene glycol dimethacrylate-octadecyl methacrylate copolymer 148640-01-1P, Divinylbenzene-octadecyl methacrylate-thioglycolic acid telomer ester with 2-hydroxyethyl methacrylate 159446-39-6P, Divinylbenzene-octadecyl methacrylate-2-mercaptoethanol telomer ester with 10-carboxyldecylacrylamide 159446-41-0P 159446-42-1P, Divinylbenzene-octadecyl methacrylate-2-mercaptoethanol telomer ester with 4-vinylbenzenecarboxylic acid 159446-44-3P, Divinylbenzene-octadecyl methacrylate-2-mercaptoethanol telomer ester with vinylacetic acid 159446-45-4P, Divinylbenzene-octadecyl methacrylate-2-mercaptoethanol telomer ester with methacrylic acid 159446-48-7P, Divinylbenzene-octadecyl methacrylate-2-mercaptoethanol telomer ester with acrylic acid 214772-24-4P, Divinylbenzene-octadecyl methacrylate-2-mercaptoethanol telomer ester with 2-carboxyethyl acrylate 214772-26-6P, Divinylbenzene-octadecyl methacrylate-2-mercaptoethanol telomer ester with α-chloroacrylic acid 214772-29-9P, Divinylbenzene-octadecyl methacrylate-2-mercaptoethanol telomer ester with 2-(2-carboxyethylcarbonyloxy)ethyl cyanoacrylate 218459-53-1P, Allyl methacrylate-dodecyl methacrylate-thioglycolic acid telomer ester with 2-hydroxyethyl methacrylate 218459-59-7P, Ethylene glycol dimethacrylate-octadecyl methacrylate-thioglycolic acid telomer ester with 2-hydroxyethyl methacrylate 218459-61-1P, Hexadecyl methacrylate-propylene glycol dimethacrylate-thioglycolic acid telomer ester with 2-hydroxyethyl methacrylate 218459-65-5P, Butyl methacrylate-divinyl

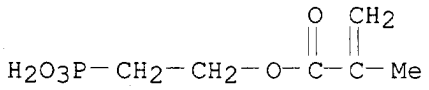
adipate-dodecyl methacrylate-thioglycolic acid telomer ester with 2-hydroxyethyl methacrylate 218459-67-7P, Ethylene glycol diacrylate-methyl methacrylate-octadecyl methacrylate-thioglycolic acid telomer ester with 2-hydroxyethyl methacrylate 218459-72-4P, Divinylbenzene-styrene-tetradecyl methacrylate-thioglycolic acid telomer ester with 2-hydroxyethyl methacrylate 324529-94-4P, Ethylene glycol diacrylate-hexadecyl methacrylate copolymer 324574-61-0P 341506-19-2P
RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PREP (Preparation); USES (Uses)
(dispersant; oil-based inks with good deliverability and image-forming properties for electrostatic ink-jet printing)

IT 139703-31-4P, Divinylbenzene-Octadecyl methacrylate-thioglycolic acid telomer 139703-33-6P, Divinylbenzene-tridecyl methacrylate-thioglycolic acid telomer 139720-57-3P, Divinylbenzene-Octadecyl methacrylate-3-thiopropionic acid telomer 139720-59-5P 139720-60-8P 139720-61-9P 139720-62-0P 139720-63-1P 139720-64-2P, Octadecyl methacrylate-divinylbenzene-2-mercaptoethylamine telomer 141181-86-4P, Divinylbenzene-dodecyl methacrylate-thioglycolic acid telomer 148532-76-7P, Octadecyl methacrylate-butyl methacrylate-ethylene glycol dimethacrylate-thioglycolic acid telomer 148532-82-5P, Hexadecyl methacrylate-divinyl adipate-thioglycolic acid telomer 159291-22-2P, Trivinylbenzene-dodecyl methacrylate-octyl methacrylate-thioglycolic acid telomer 159291-24-4P 215672-71-2P 308283-76-3P, Docosyl methacrylate-polyethylene glycol diacrylate copolymer
RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PREP (Preparation); USES (Uses)
(oil-based inks with good deliverability and image-forming properties for electrostatic ink-jet printing)

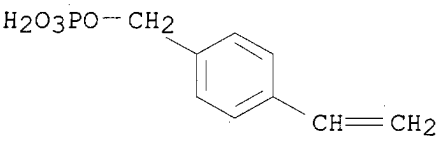
IT 80-62-6DP, polymers with (meth)acrylates 96-33-3DP, polymers with (meth)acrylates 106-91-2DP, polymers with (meth)acrylates 2867-47-2DP, polymers with (meth)acrylates 7582-21-0DP, polymers with (meth)acrylates **80730-17-2DP, polymers** with (meth)acrylates **152792-47-7DP, polymers** with (meth)acrylates 169045-89-0P **305814-07-7DP, polymers** with (meth)acrylates **305814-10-2DP, polymers** with (meth)acrylates 308278-98-0DP, polymers with (meth)acrylates 311807-05-3DP, polymers with (meth)acrylates 311807-06-4P, Silaplane FM 0721-vinyl acetate graft copolymer 340756-70-9DP, polymers with (meth)acrylates 341031-29-6P 341031-31-0P 341031-32-1P 341031-33-2P 341031-35-4P 341031-36-5P 341031-38-7P 341031-39-8P 341031-40-1P 341031-41-2P 341031-42-3P 341031-43-4P 341031-44-5P 341031-45-6P 341031-46-7P 341505-86-0P 341505-91-7P 341505-93-9P 341505-94-0P 341505-95-1P 341505-96-2P 341505-98-4P 341506-00-1P 341506-01-2P 341506-30-7P 341506-35-2P 341506-44-3P 341506-46-5P 341506-51-2P 341506-56-7P
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(oil-based inks with good deliverability and image-forming properties for electrostatic ink-jet printing)

IT **80730-17-2DP, polymers** with (meth)acrylates
152792-47-7DP, polymers with (meth)acrylates
305814-07-7DP, polymers with (meth)acrylates
305814-10-2DP, polymers with (meth)acrylates
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(oil-based inks with good deliverability and image-forming properties for electrostatic ink-jet printing)

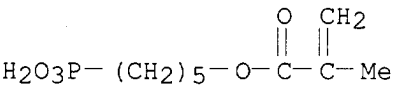
RN 80730-17-2 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 2-phosphonoethyl ester (9CI) (CA INDEX NAME)



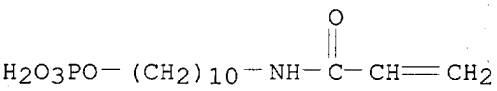
RN 152792-47-7 HCAPLUS
CN Benzenemethanol, 4-ethenyl-, dihydrogen phosphate (9CI) (CA INDEX NAME)



RN 305814-07-7 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 5-phosphonopentyl ester (9CI) (CA INDEX NAME)



RN 305814-10-2 HCAPLUS
CN 2-Propenamide, N-[10-(phosphonooxy)decyl]- (9CI) (CA INDEX NAME)



L23 ANSWER 8 OF 17 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2000:658812 HCAPLUS
DN 134:53235
ED Entered STN: 20 Sep 2000
TI Glucose **sensor** with improved hemocompatibilty
AU Yang, Y.; Zhang, S. F.; Kingston, M. A.; Jones, G.; Wright, G.; Spencer, S. A.
CS Centre for Science and Technology in Medicine, Keele University, Staffordshire, ST5 5BG, UK
SO Biosensors & Bioelectronics (2000), 15(5-6), 221-227
CODEN: BBIOE4; ISSN: 0956-5663
PB Elsevier Science S.A.
DT Journal
LA English
CC **9-1** (**Biochemical** Methods)
AB A new biocompatible copolymer has been synthesized and used in an electrochem. enzyme-based glucose **sensor**. The copolymer incorporates three segments including a monomer with an elec. neutral phosphorylcholine head group that is able to reject protein adsorption and two segments that increase the affinity to polyurethane substrate. Peel and solution circulation tests showed that this material has high attachment

to polyurethane. With the new copolymer as the outermost layer and the polyurethane as the diffusion-limiting membrane, the **sensor** showed extended linearity up to 50 mM glucose and stable output in bovine serum for 70 h. During in vivo tests, the **sensor** exhibited a steady current signal and a rapid transient response when the glucose concentration was raised. These results imply that the hemocompatibility of the glucose **sensor** coated with the new copolymer has been improved, which is crucial for a **sensor** used for clin. real-time monitoring. The material may also be suitable for application to other implantable devices.

ST glucose **sensor** hemocompatibilty copolymer

IT Biocompatibility
Blood analysis
Glucose **sensors**
Temperature
(glucose **sensor** with improved hemocompatibilty)

IT Polyurethanes, uses
RL: DEV (Device component use); USES (Uses)
(glucose **sensor** with improved hemocompatibilty)

IT Adsorption
(protein; glucose **sensor** with improved hemocompatibilty)

IT 50-99-7, D-Glucose, analysis
RL: ANT (Analyte); ANST (Analytical study)
(glucose **sensor** with improved hemocompatibilty)

IT **125275-25-4DP, copolymer** with another vinyl monomer, 3C-**copolymer**
RL: DEV (Device component use); **SPN (Synthetic preparation); PREP (Preparation)**; USES (Uses)
(glucose **sensor** with improved hemocompatibilty)

IT 78-67-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(glucose **sensor** with improved hemocompatibilty)

RE.CNT 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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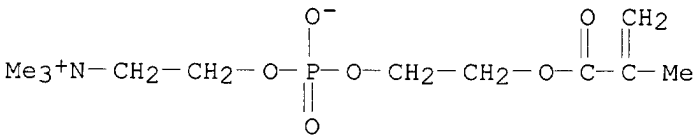
IT **125275-25-4DP, copolymer** with another vinyl monomer, 3C-**copolymer**
RL: DEV (Device component use); **SPN (Synthetic preparation); PREP (Preparation)**; USES (Uses)
(glucose **sensor** with improved hemocompatibilty)

RN 125275-25-4 HCAPLUS
CN 3,5,8-Trioxa-4-phosphaundec-10-en-1-aminium, 4-hydroxy-N,N,N,10-tetramethyl-9-oxo-, inner salt, 4-oxide, polymer with butyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

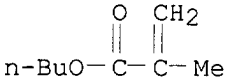
CM 1

CRN 67881-98-5
CMF C11 H22 N O6 P



CM 2

CRN 97-88-1
CMF C8 H14 O2



L23 ANSWER 9 OF 17 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1999:563650 HCAPLUS
DN 132:134206
ED Entered STN: 06 Sep 1999
TI Multifunctional biocompatible membrane and its application to fabricate a miniaturized glucose **sensor** with potential for use in vivo
AU Chen, Chien-Yuan; Ishihara, Kazuhiko; Nakabayashi, Nobuo; Tamiya, Eiichi; Karube, Isao
CS Department of Agricultural Chemistry, National Taiwan University, Taipei, 106, Taiwan
SO Biomedical Microdevices (1999), 1(2), 155-166
CODEN: BMICFC; ISSN: 1387-2176
PB Kluwer Academic Publishers
DT Journal
LA English
CC **9-1** (**Biochemical** Methods)
AB A multifunctional membrane with biocompatibility, diffusion-limiting effect, and the ability to curtail the responses of an H2O2 electrode to ascorbate and urate was prepared It was composed of MB, AB, and CTA, where MB is the copolymer of 2-methacryloyloxyethyl phosphorylcholine (MPC) and n-butyl-methacrylate (BMA), AB is the copolymer of acrylamide-2-methylpropane sulfonic acid (AMPS) and BMA, CTA is cellulose triacetate. Investigation of the biocompatibility of this membrane showed that, compared with CTA, relatively few platelets bound to it. The membrane was coated onto the working electrode of a needle-type glucose **sensor** on which immobilized glucose oxidase membrane has been coated. The **sensor** did not respond to ascorbate and urate at their concentration normally encountered in blood. Its response was not inhibited by metal

ions in blood at usual concentration The **sensor** exhibited superior thermostability in addition to a rapid response (< 90 s in batch operation), good reproducibility (RE < 5%), good stability (more than 36 h continuously in heparinized whole blood), and a wide dynamic range (5-650 mg/dL glucose). The **sensor** was used to determine glucose in serum. The data obtained from the **sensor** showed good agreement with that from a clin. automated analyzer (R = 0.973).

ST multifunctional biocompatible membrane miniaturized glucose **sensor** electrode

IT Platelet (blood)
(adhesion; multifunctional biocompatible membrane and its application to fabricate a miniaturized glucose **sensor** with potential for use in vivo)

IT Membranes, nonbiological
(biocompatible; multifunctional biocompatible membrane and its application to fabricate a miniaturized glucose **sensor** with potential for use in vivo)

IT Cations
(effect; multifunctional biocompatible membrane and its application to fabricate a miniaturized glucose **sensor** with potential for use in vivo)

IT Blood analysis
(glucose; multifunctional biocompatible membrane and its application to fabricate a miniaturized glucose **sensor** with potential for use in vivo)

IT Biocompatibility
Glucose **sensors**
Thermal stability
(multifunctional biocompatible membrane and its application to fabricate a miniaturized glucose **sensor** with potential for use in vivo)

IT Cell adhesion
(platelet; multifunctional biocompatible membrane and its application to fabricate a miniaturized glucose **sensor** with potential for use in vivo)

IT 50-81-7, Ascorbic acid, analysis 69-93-2, Uric acid, analysis
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(interferent, no effect; multifunctional biocompatible membrane and its application to fabricate a miniaturized glucose **sensor** with potential for use in vivo)

IT 50-99-7, D-Glucose, analysis
RL: ANT (Analyte); BOC (Biological occurrence); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); OCCU (Occurrence)
(multifunctional biocompatible membrane and its application to fabricate a miniaturized glucose **sensor** with potential for use in vivo)

IT 9001-37-0D, Glucose oxidase, immobilized
RL: ARG (Analytical reagent use); DEV (Device component use); ANST (Analytical study); USES (Uses)
(multifunctional biocompatible membrane and its application to fabricate a miniaturized glucose **sensor** with potential for use in vivo)

IT **256494-85-6P**
RL: ARU (Analytical role, unclassified); DEV (Device component use); POF (Polymer in formulation); **SPN (Synthetic preparation)**; ANST (Analytical study); **PREP (Preparation)**; USES (Uses)
(multifunctional biocompatible membrane and its application to fabricate a miniaturized glucose **sensor** with potential for

use in vivo)
IT 9012-09-3, Cellulose triacetate 64112-04-5 **125275-25-4**
RL: POF (Polymer in formulation); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(multifunctional biocompatible membrane and its application to fabricate a miniaturized glucose **sensor** with potential for use in vivo)
RE.CNT 52 THERE ARE 52 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
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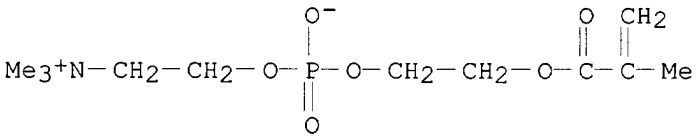
(50) Wilke, D; Fresenius' Journal of Analytical Chemistry 1997, V357, P534 HCAPLUS
(51) Yamasaki, A; Biosensors and Bioelectronics 1996, V11, P823 HCAPLUS
(52) Yui, N; Biomaterials 1989, V9, P225

IT **256494-85-6P**
RL: ARU (Analytical role, unclassified); DEV (Device component use); POF (Polymer in formulation); **SPN (Synthetic preparation)**; ANST (Analytical study); **PREP (Preparation)**; USES (Uses)
(multifunctional biocompatible membrane and its application to fabricate a miniaturized glucose **sensor** with potential for use in vivo)

RN 256494-85-6 HCAPLUS
CN 3,5,8-Trioxa-4-phosphaundec-10-en-1-aminium, 4-hydroxy-N,N,N,10-tetramethyl-9-oxo-, inner salt, 4-oxide, polymer with butyl 2-methyl-2-propenoate, 2-methyl-2-[(1-oxo-2-propenyl)amino]-1-propanesulfonic acid and 1,1,2,2-tetrachloroethane (9CI) (CA INDEX NAME)

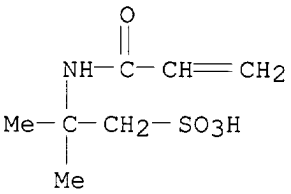
CM 1

CRN 67881-98-5
CMF C11 H22 N O6 P



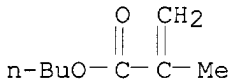
CM 2

CRN 15214-89-8
CMF C7 H13 N O4 S



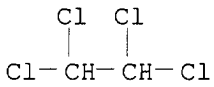
CM 3

CRN 97-88-1
CMF C8 H14 O2



CM 4

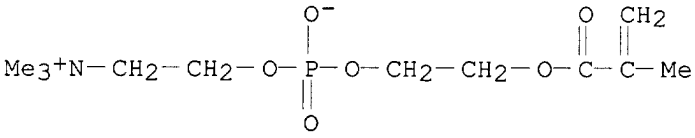
CRN 79-34-5
CMF C2 H2 Cl4



IT **125275-25-4**
RL: POF (Polymer in formulation); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(multifunctional biocompatible membrane and its application to fabricate a miniaturized glucose **sensor** with potential for use in vivo)
RN 125275-25-4 HCAPLUS
CN 3,5,8-Trioxa-4-phosphaundec-10-en-1-aminium, 4-hydroxy-N,N,N,10-tetramethyl-9-oxo-, inner salt, 4-oxide, polymer with butyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

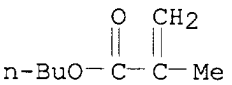
CM 1

CRN 67881-98-5
CMF C11 H22 N O6 P



CM 2

CRN 97-88-1
CMF C8 H14 O2

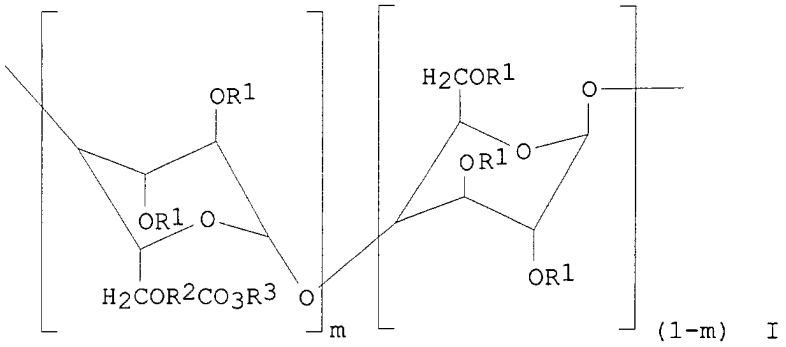


L23 ANSWER 10 OF 17 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1998:512479 HCAPLUS
DN 129:221223
ED Entered STN: 18 Aug 1998

TI Soluble cellulose derivatives, their manufacture, grafted products, and biocompatible materials
IN Fukui, Hiroki; Matsuyama, Kazuo; Ishihara, Kazuhiko; Nakahayashi, Nobuo
PA Nippon Oil and Fats Co., Ltd., Japan; Nakabayashi, Norio; Foundation for Scientific Technology Promotion
SO Jpn. Kokai Tokkyo Koho, 11 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C08B015-02
ICS A61L027-00; C08B003-22; C08F251-02
CC 63-7 (Pharmaceuticals)
Section cross-reference(s): 43
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 10212301	A2	19980811	JP 1997-14988	19970129
PRAI JP 1997-14988		19970129		

GI



I

AB Soluble cellulose derivs. I [R1 = H, Me, (hydroxy)ethyl, hydroxypropyl, CH2CO2H, acetyl, NO2; R2 = C1-15 hydrocarbylene; R3 = C4-15 hydrocarbyl; m = 0.001-1] are prepared by reaction of soluble celluloses with AR2CO3R3 (A = halo; R2, R3 = same as I) in the presence of bases. The biocompatible materials (e.g. hemodialyzers) contain grafted celluloses prepared by graft polymerization of radically polymerizable monomers onto I. 2-(Methacryloyloxy)ethyl 2-(trimethylammonio)ethyl phosphate was polymerized in the presence of cellulose derivative (prepared from hydroxypropyl Me cellulose and BrCH2CO3CMe3) to give a graft polymer. Cellulose membrane was coated with an aqueous solution of the graft polymer to show a low protein adsorption.
ST cellulose graft polymer biocompatible medical material; hemodialyzer membrane cellulose graft polymer; peroxy ester cellulose graft polymer
IT Organ, animal
(artificial; preparation of soluble cellulose graft polymers for biocompatible
medical materials)
IT Medical goods
(catheters; preparation of soluble cellulose graft polymers for biocompatible
medical materials)
IT Dialyzers
(hemodialyzers; preparation of soluble cellulose graft polymers for

biocompatible medical materials)

IT **Biosensors**
(preparation of soluble cellulose graft polymers for biocompatible medical materials)

IT 868-77-9DP, 2-Hydroxyethyl methacrylate, graft copolymers with tert-butylperoxycarbonylmethyl hydroxypropyl Me cellulose **67881-98-5DP**, 2-(Methacryloyloxy)ethyl 2-(trimethylammonio)ethyl phosphate, graft **copolymers** with tert-butylperoxycarbonylmethyl hydroxypropyl Me cellulose 87026-37-7DP, reaction products with hydroxypropyl Me cellulose, graft copolymers with 2-(methacryloyloxy)ethyl 2-(trimethylammonio)ethyl phosphate 88475-85-8DP, tert-Butylperoxy 4-(bromomethyl)benzoate, reaction products with hydroxypropyl Me cellulose, graft copolymers with 2-(methacryloyloxy)ethyl 2-(trimethylammonio)ethyl phosphate
RL: PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of soluble cellulose graft **polymers** for biocompatible medical materials)

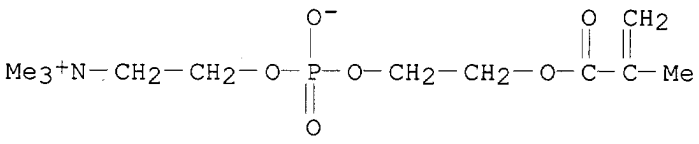
IT 75-91-2, tert-Butyl hydroperoxide 9004-65-3, Hydroxypropyl methyl cellulose 22118-09-8, Bromoacetyl chloride 52780-16-2, 4-(Bromomethyl)benzoyl chloride
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of soluble cellulose graft polymers for biocompatible medical materials)

IT 87026-37-7P 88475-85-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of soluble cellulose graft polymers for biocompatible medical materials)

IT **67881-98-5DP**, 2-(Methacryloyloxy)ethyl 2-(trimethylammonio)ethyl phosphate, graft **copolymers** with tert-butylperoxycarbonylmethyl hydroxypropyl Me cellulose
RL: PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of soluble cellulose graft **polymers** for biocompatible medical materials)

RN 67881-98-5 HCAPLUS

CN 3,5,8-Trioxa-4-phosphaundec-10-en-1-aminium, 4-hydroxy-N,N,N,10-tetramethyl-9-oxo-, inner salt, 4-oxide (9CI) (CA INDEX NAME)



L23 ANSWER 11 OF 17 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1996:15020 HCAPLUS

DN 124:161638

ED Entered STN: 06 Jan 1996

TI Polysiloxane-based biomembranes

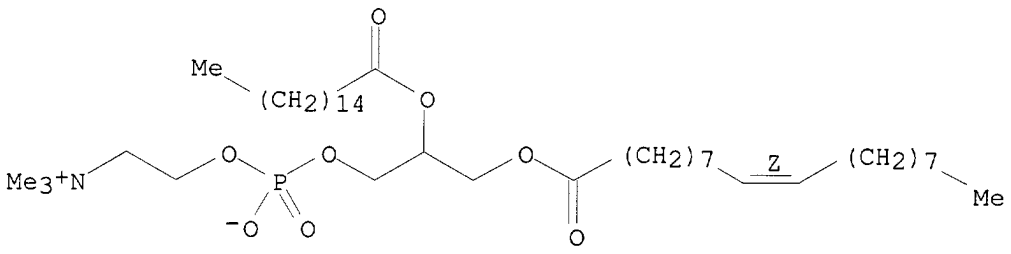
AU Miller, L. S.; Rhoden, A. L.; Byrne, N.; Heptinstall, J.; Walton, D. J.

CS School Natural Environmental Sciences, Coventry University, Coventry, CV1 5FB, UK

SO Materials Science & Engineering, C: Biomimetic Materials, Sensors and Systems (1995), C3(3-4), 187-90

CODEN: MSCEEE; ISSN: 0928-4931
PB Elsevier
DT Journal
LA English
CC 76-3 (Electric Phenomena)
Section cross-reference(s): **36**
AB Natural phosphatidylcholine was attached to a polysiloxane backbone. The Langmuir film, Langmuir-Blodgett deposition and Montal-Mueller properties were studied. The material forms exceptionally stable Langmuir films. Montal-Mueller bilayers have a resistance of about 2 + 104 Ω cm-2 and a breakdown voltage of about 350 mV. Langmuir-Blodgett bilayer films have a low-voltage resistance of about 2 + 105 Ω cm-2, a transition to a square-law dependence at around 0.1 V, and a breakdown voltage greater than 1 V. There is evidence that bacteriorhodopsin in readily incorporated into such films.
ST polysiloxane attached phosphatidylcholine Langmuir Blodgett film; elec resistance breakdown voltage LB film; Montal Mueller bilayer polysiloxane based biomembrane
IT **Dielectric** strength
Electric resistance
(Langmuir film, Langmuir-Blodgett deposition and Montal-Mueller properties of polysiloxane-based biomembranes)
IT **17118-56-8DP**, reaction product with dimethylsilanediol-methylsilsilanediol **copolymer** 156118-35-3DP, Dimethylsilanediol-methylsilanediol copolymer, reaction product with phosphatidylcholine
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(Langmuir film, Langmuir-Blodgett deposition and Montal-Mueller properties of polysiloxane-based biomembranes)
IT **17118-56-8DP**, reaction product with dimethylsilanediol-methylsilsilanediol **copolymer**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(Langmuir film, Langmuir-Blodgett deposition and Montal-Mueller properties of polysiloxane-based biomembranes)
RN 17118-56-8 HCAPLUS
CN 3,5,9-Trioxa-4-phosphaheptacos-18-en-1-aminium, 4-hydroxy-N,N,N-trimethyl-10-oxo-7-[(1-oxohexadecyl)oxy]-, inner salt, 4-oxide, (18Z)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

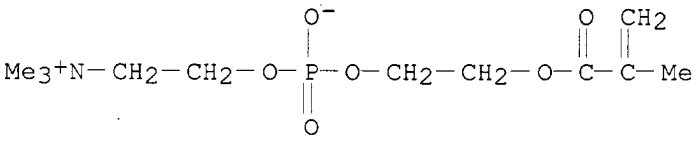


L23 ANSWER 12 OF 17 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1994:293211 HCAPLUS
DN 120:293211
ED Entered STN: 11 Jun 1994
TI Studies on biocompatible membranes. (II). Biocompatibility of poly(acrylonitrile) copolymers with phosphonolipid polar groups

AU Lee, Mi Kyung; Jung, Suk Gyu; Kim, Han Do; Cho, Hyun Hok; Kim, Kyung Hwan; Park, Soo Min
CS Coll. Eng., Pusan Natl. Univ., Pusan, S. Korea
SO Journal of the Korean Fiber Society (1993), 30(11), 823-8
CODEN: HSKCDQ; ISSN: 0253-6420
DT Journal
LA English
CC **9-1** (**Biochemical** Methods)
Section cross-reference(s): **13**, 80
AB A methacrylate monomer having the phosphonolipid polar group, 2-(methacryloxyl)-2-(trimethylammonium) Et phosphate (MTP) was prepared and copolymd. with acrylonitrile (AN) and glycidylmethacrylate (GMA). The polymer membranes and enzyme immobilized membranes were prepared from the copolymers by a solution casting technique. Amts. of protein adsorption on polymer surface were investigated using a sorption method. Protein adsorption on the surface of the copolymer with phosphonolipid group was suppressed effectively. In platelet adhesion tests, the copolymer with a phosphonolipid group displayed less platelet adhesion than homopolymers, poly(acrylonitrile), poly(hydroxyethyl methacrylate) and Cuprophane ®. The current reproducibility of glucose **sensor** was obtained using various glucose solns. The current was reproducible within 40 h in the presence of plasma proteins.
ST methacryloxyltrimethylammonium ethyl phosphate acrylonitrile glycidylmethacrylate membrane; glucose **sensor** biocompatible membrane
IT Blood analysis
(glucose determination in, using methacryloxyltrimethylammonium Et phosphate acrylonitrile glycidylmethacrylate biocompatible membrane **sensor**)
IT Electrodes
(bio-, enzyme, glucose-selective, construction of, using methacryloxyltrimethylammonium Et phosphate acrylonitrile glycidylmethacrylate biocompatible membrane)
IT 9004-34-6, Cellulose, biological studies 25014-41-9, Polyacrylonitrile 25249-16-5, Poly(2-hydroxyethyl methacrylate)
RL: BIOL (Biological study)
(biocompatibility of)
IT 50-99-7, Glucose, analysis
RL: ANT (Analyte); ANST (Analytical study)
(determination of, using methacryloxyltrimethylammonium Et phosphate acrylonitrile glycidylmethacrylate biocompatible membrane **sensor**)
IT 9001-37-0, Glucose oxidase
RL: PROC (Process)
(immobilization of, on methacryloxyltrimethylammonium Et phosphate acrylonitrile glycidylmethacrylate copolymer membrane)
IT **154957-77-4P**
RL: **SPN (Synthetic preparation); PREP (Preparation)**
(preparation and biocompatibility of, glucose **sensor** construction based on)
IT **154957-77-4P**
RL: **SPN (Synthetic preparation); PREP (Preparation)**
(preparation and biocompatibility of, glucose **sensor** construction based on)
RN 154957-77-4 HCAPLUS
CN 3,5,8-Trioxa-4-phosphaundec-10-en-1-aminium, 4-hydroxy-N,N,N,10-tetramethyl-9-oxo-, inner salt, 4-oxide, polymer with oxiranylmethyl 2-methyl-2-propenoate and 2-propenenitrile (9CI) (CA INDEX NAME)

CM 1

CRN 67881-98-5
CMF C11 H22 N O6 P

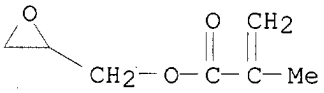


CM 2

CRN 107-13-1
CMF C3 H3 N

CM 3

CRN 106-91-2
CMF C7 H10 O3



L23 ANSWER 13 OF 17 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1994:26638 HCAPLUS
DN 120:26638
ED Entered STN: 22 Jan 1994
TI Polymeric liposomes formed from a new phosphatidylcholine with terminal diene groups
AU Anikin, Alexei; Chupin, Vladimir; Anikin, Michael; Serebrennikova, Galina; Tarahovsky, Jury
CS M. V. Lomonosov Inst. Fine Chem. Technol., Moscow, 117571, Russia
SO Makromolekulare Chemie (1993), 194(10), 2663-73
CODEN: MACEAK; ISSN: 0025-116X
DT Journal
LA English
CC **9-2** (**Biochemical** Methods)
Section cross-reference(s): **6**, 23
AB A novel polymerizable phospholipid with conjugated diene groups at the hydrocarbon chain ends, 1,2-bis(11,13-tetradecadienoyl)-sn-glycero-3-phosphocholine, was prepared This phospholipid gives liposomes which can be readily polymerized upon γ- and UV-irradiation The conversion is up to 95% within 10 h at 60° or within 3 days at room temperature According to light scattering, 31P NMR and electron microscopy, the polymerized liposomes are detergent-resistant and maintain their structure under ultrasonic treatment and in organic solvent media.

ST polymer liposome phosphatidylcholine terminal diene prepn; membrane phosphatidylcholine terminal diene prepn

IT Kinetics of polymerization
(of bis(tetradecadienoyl)glycerophosphocholine, liposome preparation for diagnostic and **biosensor** uses in relation to)

IT Membrane, biological
(polyphosphatidylcholine derivative for , preparation and properties of)

IT Liposome
(multilamellar, poly[bis(tetradecadienoyl)glycerophosphocholine], preparation and properties of, for **biosensors** and diagnostics purposes)

IT Polymerization
(photochem., of bis(tetradecadienoyl)glycerophosphocholine, liposome preparation for diagnostic and **biosensor** uses in relation to)

IT Phosphatidylcholines, polymers
RL: PREP (Preparation)
(polymers, preparation and properties of liposomes of, for **biosensors** and diagnostic purposes)

IT Polymerization
(radiochem., of bis(tetradecadienoyl)glycerophosphocholine, liposome preparation for diagnostic and **biosensor** uses in relation to)

IT Polymerization
(thermal, of bis(tetradecadienoyl)glycerophosphocholine, liposome preparation for diagnostic and **biosensor** uses in relation to)

IT 107-02-8, Acrolein, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(Wittig reaction of, with (methoxycarbonyldecyl)triphenylphosphonium bromide)

IT 2834-05-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(esterification of)

IT 68532-63-8P
RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(preparation and Wittig reaction of, with acrolein)

IT 151416-65-8P
RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(preparation and acylation by, of glycerophosphocholinecadmium dichloride complex)

IT 151416-63-6P 151416-64-7P
RL: PREP (Preparation)
(preparation and conversion to anhydride)

IT 151416-66-9P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and homopolymn. of)

IT 151416-62-5P 151416-67-0P
RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(preparation and hydrolysis of)

IT **151927-35-4P**
RL: **PREP (Preparation)**
(preparation and properties of liposomes of, for **biosensors** and diagnostic uses)

IT 6287-90-7P
RL: PREP (Preparation)
(preparation and reaction of triphenylphosphine)

IT 603-35-0, Triphenylphosphine, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with Me bromoundecanoate)

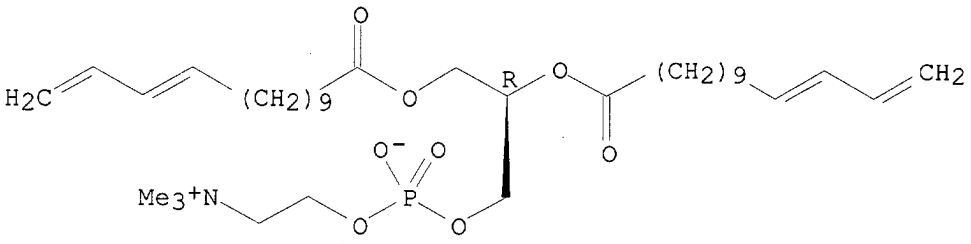
IT **151927-35-4P**
RL: **PREP (Preparation)**

(preparation and properties of liposomes of, for **biosensors** and diagnostic uses)
RN 151927-35-4 HCAPLUS
CN 3,5,9-Trioxa-4-phosphatricosa-20,22-dien-1-aminium, 4-hydroxy-N,N,N-trimethyl-10-oxo-7-[(1-oxo-11,13-tetradecadienyl)oxy]-, inner salt, 4-oxide, (7R)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 139879-59-7
CMF C36 H64 N O8 P

Absolute stereochemistry.
Double bond geometry unknown.



L23 ANSWER 14 OF 17 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1992:37513 HCAPLUS
DN 116:37513
ED Entered STN: 08 Feb 1992
TI **Biosensors** with ion channel-containing liquid crystalline membranes
IN Gitler, Carlos; Yuli, Itzhak
PA Yeda Research and Development Co., Ltd., Israel
SO Eur. Pat. Appl., 19 pp.
CODEN: EPXXDW
DT Patent
LA English
IC ICM G01N033-543
ICS C12M001-40
CC **9-7** (**Biochemical** Methods)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 441120	A2	19910814	EP 1991-100198	19910108
	EP 441120	A3	19920122		
	EP 441120	B1	19951129		
	EP 441120	B2	20020403		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE				
	IL 93020	A1	19950629	IL 1990-93020	19900109
	CA 2033776	AA	19910710	CA 1991-2033776	19910108
	CA 2033776	C	20010313		
	AT 130938	E	19951215	AT 1991-100198	19910108
	ES 2082867	T3	19960401	ES 1991-100198	19910108
	AU 9169245	A1	19910711	AU 1991-69245	19910109
	AU 625017	B2	19920625		
	US 5204239	A	19930420	US 1991-638488	19910109

JP 06090736 A2 19940405 JP 1991-188434 19910109
JP 3213341 B2 20011002
PRAI IL 1990-93020 A 19900109

AB **Biosensors** for qual. and quant. anal. comprise an amphipathic liquid crystalline membrane composed of a lipid bilayer attached to a recording electrode via bridging anchoring mols. The lipid bilayer is doped with biol. or synthetic ion channels and is in continuous contact with a bulk aqueous medium on both its surfaces. The bridging anchoring mols. may contain a phospholipid moiety linked to a polyoxyalkylene chain terminated with a thiol or thioether residue. Thus, acetylcholine receptors were incorporated into mixed micelles containing phosphatidylethanolamine-N-ethylene-(oxyethylene)10-ethylene-mercaptan as bridging mol. (preparation given), followed by attachment of the mixed micelles to a Au electrode. The basal activity observed with acetylcholine receptor-containing membranes was somewhat higher than that observed without any added dopant. On addition of acetylcholine to the medium bathing the outer surface of the bilayer attached to the electrode, the appearance of increased noise level and some discrete channel events with different activity levels were observed; the enhanced activity remained for 30 min. Also described are preparation of a mellitin-derived peptide conjugated with a trinitrobenzene-containing peptide and interaction of the conjugate with anti-trinitrobenzene monoclonal antibody and the Au electrode-attached bilayer.

ST **biosensor** bilayer membrane ion channel; electrode bilayer membrane ion channel; acetylcholine receptor lipid bilayer **biosensor**

IT Ion channel
(and lipid bilayer in **biosensor**)

IT Receptors
RL: ANST (Analytical study)
(as ion channels in lipid bilayer for **biosensor**)

IT Ligands
RL: ANT (Analyte); ANST (Analytical study)
(determination of, **biosensor** with lipid bilayer and ion channel for)

IT Peptides, uses
RL: USES (Uses)
(mellitin-like, for ion channel in lipid bilayer in **biosensor**)

IT Lipids, uses
RL: USES (Uses)
(membrane of bilayer of, and ion channel in **biosensor**)

IT Immobilization, biochemical
(of lipid bilayer in **biosensor**, phospholipid conjugate with hydrophilic spacer arm in)

IT Polyoxyalkylenes, compounds
RL: ANST (Analytical study)
(thioether group-terminated, conjugates, with phosphatidylethanolamines, for lipid bilayer attachment to **biosensor**)

IT Antibodies
RL: ANST (Analytical study)
(to hapten component of mellitin-like peptide, **biosensor** with lipid bilayer and ion channel in relation to)

IT **Biosensors**
(with lipid bilayer and ion channel)

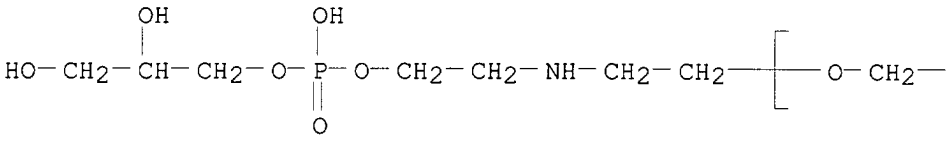
IT Membrane, biological
(bilayer, lipid, and ion channel in **biosensor**)

IT Electrodes
(bio-, with lipid bilayer and ion channel)

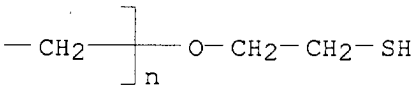
IT Receptors
RL: ANST (Analytical study)
(cholinergic, lipid bilayer containing, **biosensor** containing)
IT Phospholipids, compounds
RL: ANST (Analytical study)
(conjugates, with hydrophilic spacer arm, in lipid bilayer attachment to **biosensor**)
IT Phosphatidylethanolamines
RL: ANST (Analytical study)
(conjugates, with thiol- or thioether-terminated polyoxyalkylene, for lipid bilayer attachment to **biosensor**)
IT Polyoxyalkylenes, compounds
RL: ANST (Analytical study)
(mercapto-terminated, conjugates, with phosphatidylethanolamines, for lipid bilayer attachment to **biosensor**)
IT Antibodies
RL: ANST (Analytical study)
(monoclonal, to trinitrobenzene, reactivity with trinitrobenzene-containing peptide conjugate with mellitin-derived peptide and lipid bilayer-containing membrane electrode)
IT Phosphatidylethanolamines
RL: ANST (Analytical study)
(reaction products, with dibromo PEG derivative, for lipid bilayer attachment to **biosensor**)
IT 138250-15-4
RL: ANST (Analytical study)
(as ion channel, in **biosensor** with ion channel-containing lipid bilayer)
IT 51-84-3, Acetyl choline, analysis
RL: ANT (Analyte); ANST (Analytical study)
(determination of, **biosensor** with acetylcholine receptor-containing lipid bilayer for)
IT 37231-28-0D, Melittin, peptide analogs
RL: ANST (Analytical study)
(for ion channel in lipid bilayer in **biosensor**)
IT 57-88-5, Cholesterol, biological studies 59-02-9, α-Tocopherol
RL: ANST (Analytical study)
(mixed micelle containing, in ion channel-containing lipid bilayer preparation for **biosensor**)
IT 76779-16-3P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction of, with phosphatidylethanolamine, for lipid bilayer attachment to **biosensor**)
IT **138002-99-0P**
RL: **SPN (Synthetic preparation); PREP (Preparation)**
(preparation of, for attachment of ion channel-containing lipid bilayer to **biosensor**)
IT 25322-68-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with phosphoric trichloride)
IT 138250-16-5
RL: PRP (Properties)
(reactivity of, with anti-trinitrobenzene monoclonal antibody and lipid bilayer-containing electrode)
IT **138002-99-0P**
RL: **SPN (Synthetic preparation); PREP (Preparation)**
(preparation of, for attachment of ion channel-containing lipid bilayer to

biosensor)
RN 138002-99-0 HCAPLUS
CN Poly(oxy-1,2-ethanediyl), α-[2-[[2-[[(2,3-dihydroxypropoxy)hydroxyphosphinyl]oxy]ethyl]amino]ethyl]-ω-(2-mercaptoethoxy)- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



L23 ANSWER 15 OF 17 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1991:234837 HCAPLUS
DN 114:234837
ED Entered STN: 15 Jun 1991
TI Vinylpyridinium copolymers as adsorbents for microorganisms
IN Yoshimatsu, Akira; Kondo, Akihiro
PA Kao Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM A01N043-40
ICA C08F008-44; C08F226-06; C08L039-08
CC 61-5 (Water)
Section cross-reference(s): **10**, 16, 38
FAN.CNT 1

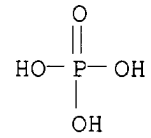
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 02237901	A2	19900920	JP 1989-59180	19890310
PRAI JP 1989-59180		19890310		

AB Adsorbents for microorganisms contain vinylpyridinium copolymers prepared by copolymn. of vinylpyridines with hydrophilic crosslinkable monomers (and other vinyl monomers), followed by quaternization. The adsorbents have good mech. strength, quickly adsorb microorganisms from water or air or from solid materials without adversely affecting the water, air, or surface. The adsorbents are also useful for immobilization of microorganisms in bioreactors or **biosensors**. A suitable polymer is formed by mixing 4-vinylpyridine 105, diethylene glycol dimethacrylate 13, CaCO3 10, AIBN 1, and Me benzoate 100 g in water at 80° for 3 h to give 110 g copolymer, which (21 g) is treated with 120 g PhCH2Br in MeOH at 60° for 5 h to give 48 g 1-benzyl-4-vinylpyridinium bromide-diethylene glycol dimethacrylate copolymer (I). I at 2 g adsorbed Escherichia coli (6.5 + 107/mL dispersed in 20 mL physiol. saline solution) within 16 min, compared with 2.5 h for 1-benzyl-4-vinylpyridinium

bromide-divinylbenzene copolymer.
ST microorganism adsorbent vinylpyridinium copolymer; water treatment vinylpyridinium copolymer adsorbent; pyridinium vinyl copolymer water treatment; immobilization microorganism vinylpyridinium copolymer
IT Air conditioning
(vinylpyridinium copolymers as adsorbents for microorganisms in)
IT Quaternary ammonium compounds, polymers
RL: OCCU (Occurrence)
(vinylpyridinium copolymers, as adsorbents for microorganisms in water or air)
IT Adsorbents
(vinylpyridinium copolymers, for microorganisms removal from air or water)
IT Wastewater treatment
Water purification
(disinfection, vinylpyridinium copolymers as adsorbents for removal of microorganisms in)
IT 132705-85-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and quaternization of)
IT 132682-47-4P 132682-49-6P 132682-51-0P 132682-52-1P
132682-53-2P 132682-54-3P 132705-86-3P 132705-87-4P
132705-89-6P 132705-91-0P 132745-98-3P 133927-76-1P
RL: **PREP (Preparation)**
(preparation of, as adsorbent for microorganisms in water or air)
IT 100-39-0, Benzyl bromide
RL: RCT (Reactant); RACT (Reactant or reagent)
(quaternization by, of vinylpyridine copolymer)
IT **132682-53-2P**
RL: **PREP (Preparation)**
(preparation of, as adsorbent for microorganisms in water or air)
RN 132682-53-2 HCAPLUS
CN 2-Propenoic acid, 3,6,9,12,15,18,21-heptaoxatricosane-1,23-diyl ester, polymer with 2-ethenylpyridine, compd. with (bromomethyl)benzene, phosphate (9CI) (CA INDEX NAME)

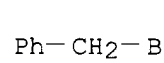
CM 1

CRN 7664-38-2
CMF H3 O4 P



CM 2

CRN 100-39-0
CMF C7 H7 Br



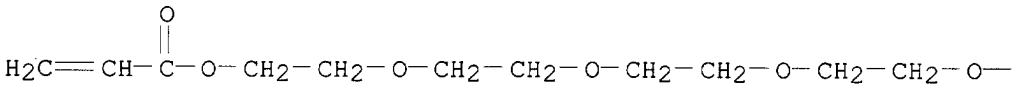
CM 3

CRN 132682-48-5
CMF (C22 H38 O11 . C7 H7 N)x
CCI PMS

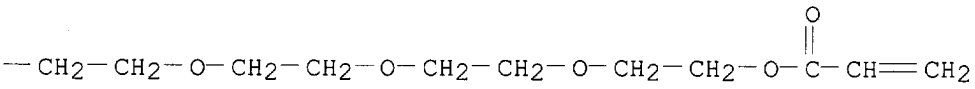
CM 4

CRN 134704-83-9
CMF C22 H38 O11

PAGE 1-A

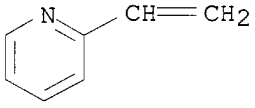


PAGE 1-B



CM 5

CRN 100-69-6
CMF C7 H7 N



L23 ANSWER 16 OF 17 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1989:213278 HCAPLUS
DN 110:213278
ED Entered STN: 10 Jun 1989
TI Preparation of lipid membranes and their use
IN Ono, Seigo; Nakaya, Tadao
PA Oki Electric Industry Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C07F009-10
ICS B32B009-00; C08F030-02
CC 33-6 (Carbohydrates)
Section cross-reference(s): 5, 7, **9**, 63
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 63222186	A2	19880916	JP 1987-53977	19870311
	JP 06004654	B4	19940119		
PRAI	JP 1987-53977		19870311		

AB CH2:CRCONHCH2CH2OP(O)(OH)OCH2CH[O2C(CH2)14Me]CH2O2C(CH2)14Me [I; R = H, Me] are polymerized to give membranes useful as ion-permeable membranes (no data), etc. H3N+CH2CH2OP(O)(O-)OCH2CH[O2C(CH2)14Me]CH2O2C(CH2)14Me was reacted with CH2:CHCOCl in pyridine containing Et3N to give I (R = H), a benzene solution of which was spread on a silicone plate, which was then irradiated with γ ray to give a white, elastic membrane.

ST lipid membrane manuf ion permeable

IT Animal tissue culture
Biosensors
Plant tissue culture
(artificial lipid membranes for, preparation of)

IT Humidity
(**sensors** for, artificial lipid membranes for, preparation of)

IT Organ
(artificial, artificial lipid membranes for, preparation of)

IT 814-68-6, Acryloyl chloride 920-46-7, Methacryloyl chloride
RL: RCT (Reactant); RACT (Reactant or reagent)
(amidation by, of phosphatidylcholine)

IT 5681-36-7
RL: RCT (Reactant); RACT (Reactant or reagent)
(amidation of, by acryloyl chloride and methacroyl chloride)

IT **119845-22-6P 119845-24-8P**
RL: **SPN (Synthetic preparation); PREP (Preparation)**
(preparation of, as ion-permeable membrane)

IT 119845-21-5P 119845-23-7P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, for ion-permeable membrane)

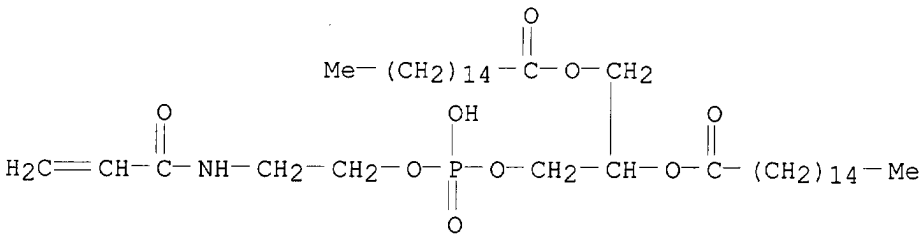
IT **119845-22-6P 119845-24-8P**
RL: **SPN (Synthetic preparation); PREP (Preparation)**
(preparation of, as ion-permeable membrane)

RN 119845-22-6 HCAPLUS

CN Hexadecanoic acid, 1-(3-hydroxy-3-oxido-8-oxo-2,4-dioxa-7-aza-3-phosphadec-9-en-1-yl)-1,2-ethanediyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 119845-21-5
CMF C40 H76 N O9 P



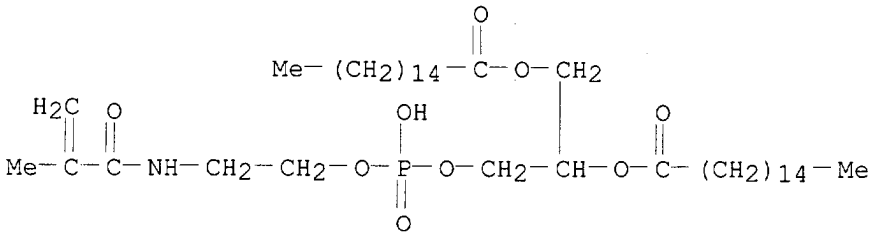
RN 119845-24-8 HCAPLUS

CN Hexadecanoic acid, 1-(3-hydroxy-9-methyl-3-oxido-8-oxo-2,4-dioxa-7-aza-3-phosphadec-9-en-1-yl)-1,2-ethanediyl ester, homopolymer (9CI) (CA INDEX

NAME)

CM 1

CRN 119845-23-7
CMF C41 H78 N O9 P

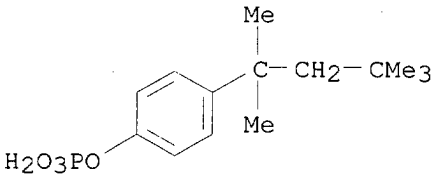


L23 ANSWER 17 OF 17 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1983:551151 HCAPLUS
DN 99:151151
ED Entered STN: 12 May 1984
TI Calcium ion-selective electrode studies: covalent bonding of organic phosphates and phosphonates to polymer matrixes
AU Hobby, P. C.; Moody, G. J.; Thomas, J. D. R.
CS Appl. Chem. Dep., Univ. Wales Inst. Sci. Technol., Cardiff, CF1 3NU, UK
SO Analyst (Cambridge, United Kingdom) (1983), 108(1286), 581-90
CODEN: ANALAO; ISSN: 0003-2654
DT Journal
LA English
CC 79-2 (Inorganic Analytical Chemistry)
Section cross-reference(s): **35**, 72
AB The preparation and Ca2+ selectivity of organic phosphate- and phosphonate-grafted polymer membranes were studied for partly hydrolyzed vinyl acetate-vinyl chloride polymer grafted with monodecyl phosphate (I), mono-[4-(1,1,3,3-tetramethylbutyl)phenyl] phosphate (II), and monooctyl phenylphosphonate. The preparation of phosphated polystyrene membranes by Friedel-Crafts and free-radical processes was attempted. Membranes containing I and II required phenylphosphonate solvent mediator. The electrodes had good response but poor Ca2+ selectivity compared with easily fabricated membranes of phys. mixts. of **sensor** plus solvent mediator in PVC.
ST calcium ion selective electrode; org phosphate polymer membrane electrode; phosphonate graft copolymer membrane; vinyl acetate chloride polymer membrane
IT Electrodes
(calcium-selective, organic phosphate- and phosphonate-grafted polymer membranes)
IT 7440-70-2, analysis
RL: ANT (Analyte); ANST (Analytical study)
(determination of, selective electrode with covalent bonding of organic phosphates and phosphonates to polymer matrixes for)
IT **1986-91-0DP, polymers** with partly hydrolyzed vinyl acetate-vinyl chloride **polymer 3921-30-0DP, polymers** with partly hydrolyzed vinyl acetate-vinyl chloride

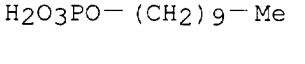
polymer 9003-22-9DP, partly hydrolyzed, polymers with organic phosphates and phosphonates **13244-67-2DP, polymers** with partly hydrolyzed vinyl acetate-vinyl chloride **polymer**
RL: PREP (Preparation)
(graft, membranes, preparation and calcium ion selectivity of)

IT **1986-91-0DP, polymers** with partly hydrolyzed vinyl acetate-vinyl chloride **polymer 3921-30-0DP, polymers** with partly hydrolyzed vinyl acetate-vinyl chloride **polymer 13244-67-2DP, polymers** with partly hydrolyzed vinyl acetate-vinyl chloride **polymer**
RL: PREP (Preparation)
(graft, membranes, preparation and calcium ion selectivity of)

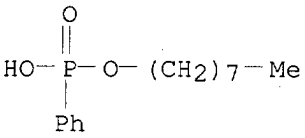
RN 1986-91-0 HCAPLUS
CN Phenol, 4-(1,1,3,3-tetramethylbutyl)-, dihydrogen phosphate (9CI) (CA INDEX NAME)



RN 3921-30-0 HCAPLUS
CN Phosphoric acid, monodecyl ester (8CI, 9CI) (CA INDEX NAME)



RN 13244-67-2 HCAPLUS
CN Phosphonic acid, phenyl-, monooctyl ester (8CI, 9CI) (CA INDEX NAME)



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